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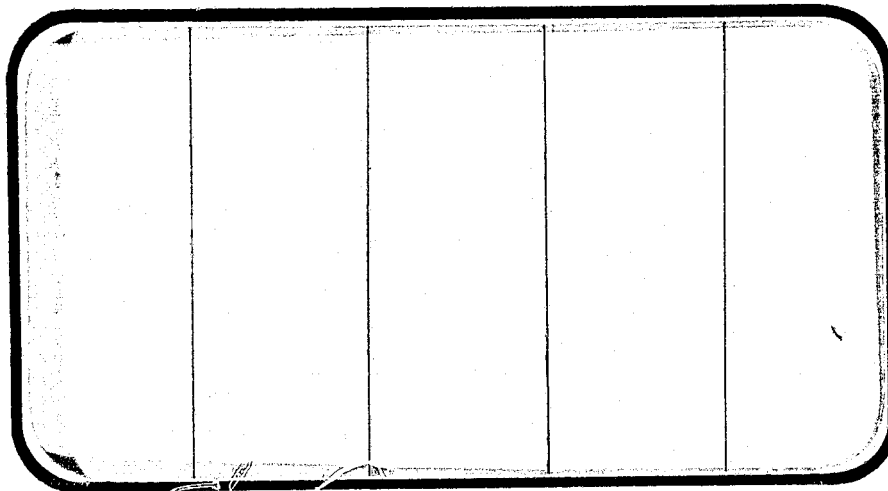
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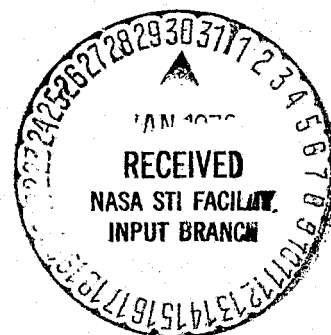
(NASA-CR-141844) AERODYNAMIC RESULTS OF A
SEPARATION TEST (CA20) CONDUCTED AT THE
BOEING TRANSONIC WIND TUNNEL USING
0.030-SCALE MODELS OF THE CONFIGURATION
140A/B (MODIFIED) SSV ORBITER (MODEL NO.

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT



JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANAGEMENT services

SPACE DIVISION



CHRYSLER
CORPORATION

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VOLUME 1 of 3

AERODYNAMIC RESULTS OF A SEPARATION TEST (CA20)

CONDUCTED AT THE BOEING TRANSONIC WIND TUNNEL
USING 0.030-SCALE MODELS OF THE CONFIGURATION
140A/B (MODIFIED) SSV ORBITER (MODEL NO. 45-0) AND
THE BOEING 747 CARRIER (MODEL NO. AX 1319 I-1)

by

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by

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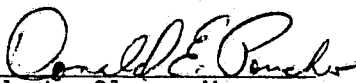
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AERODYNAMIC RESULTS OF A SEPARATION TEST (CA20)
CONDUCTED AT THE BOEING TRANSONIC WIND TUNNEL
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140A/B (MODIFIED) SSV ORBITER (MODEL NO. 45-0) AND
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ABSTRACT

An experimental aerodynamic investigation (CA20) was conducted in the Boeing Transonic Wind Tunnel from October 9 through October 16, 1974. A Rockwell built 0.030-scale 45-0 modified SSV Orbiter Configuration 140A/B model and a Boeing built 0.030-scale 747 carrier model were tested to provide six component force and moment data for each vehicle in proximity to the other at a matrix of relative positions, attitudes and test conditions. Orbiter model support system tare effects were determined for corrections to obtain support-free aerodynamics.

In addition to the balance force data, pressures were measured. Pressure orifices were located at the base of the Orbiter, on either side of the vertical blade strut, and at the mid-root chord on either side of the vertical tail. Strain gages were installed on the Boeing 747 vertical tail to indicate buffet onset.

The 747 carrier was varied through angles of attack (measured with respect to its FRL) of 0°, 2°, 4°, 6°, 8°, and 10° and varied through sideslip

angles of 0° , $+5^\circ$, and -5° . Elevator settings were also varied.

The SSV Orbiter model was varied through angles of attack of 6° , 8° , 10° , 12° , 14° , 16° , and 18° and varied through sideslip angles of 2.5° , 0° , -2.5° , -5° , -7.5° , -10° , and -15° .

Vertical displacements of 0", 1", 2", 3", 5", 7", 9", 11", 13", 15", 18", and 21.6" (model scale) were tested. Longitudinal movements of 0", 3.6", and 7.2" (model scale) and lateral displacements of 0" and 3.6" (model scale) were tested to simulate various separation positions. Orbiter elevon deflections were also varied.

Orbiter support system tare and interference effects were determined utilizing various support and image support strut configurations. Carrier support system tare and interference effects were determined during test CA5.

The Orbiter tail cone and carrier models were provided by The Boeing Company. The Orbiter model was provided by Rockwell. These were the same models used earlier in test CA5.

This report for CA20 consists of three volumes: Volume 1 - data figures 1 through 25; Volume 2 - data figures 26 through 39; Volume 3 - tabulated source data.

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- (B) CN, CLM, CA, CL, CD, CY, CYN, CBL versus DZ
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NOMENCLATURE

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Description</u>
b	BREF	reference span, in
BSTA	XC	longitudinal carrier station, in
BWL	ZC	vertical carrier station, in
\bar{c}	LREF	mean aerodynamic chord, in
C_A	CA	axial force coefficient
C_D	CD	drag coefficient
$C_{\ell B}$	CBL	body axis rolling moment coefficient
$C_{\ell S}$	CSL	stability axis rolling moment coefficient
C_L	CL	lift coefficient
C_m	CLM	pitching moment coefficient
C_{nB}	CYN	body axis yawing moment coefficient
C_{nS}	CLN	stability axis yawing moment coefficient
CN	CN	normal force coefficient
C_{pB1}	PB1	Orbiter base pressure coefficient for orifice no. 1, see Figure 2c
C_{pB2}	PB2	Orbiter base pressure coefficient for orifice no. 2, see Figure 2c
C_{pB4}	PB4	Orbiter base pressure coefficient for orifice no. 4, see Figure 2c
C_{pCAV}	PCAV	Orbiter cavity pressure coefficient

NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$C_{P_{EB_1}}$	LHLS	coefficient of pressure measured on fuselage at left side of vertical tail
$C_{P_{EB_2}}$	RHLS	coefficient of pressure measured on fuselage at right side of vertical tail
$C_{P_{SC}}$	PSC	carrier cavity pressure coefficient
$C_{P_{S_1}}$	LHVERT	coefficient of pressure measured on left side of Orbiter strut
$C_{P_{S_2}}$	RHVERT	coefficient of pressure measured on right side of Orbiter strut
C_Y	CY	side force coefficient
C.G.		center of gravity
C.R.		center of rotation
FRL		fuselage reference line
α_0	IORB	Orbiter incidence relative to carrier FRL, deg.
L_B	LREF	reference body length, in
MACH	MACH	Mach number
M.R.C.	XMRP, YMRP ZMRP	moment reference center, in
MS		model station, in
P_{Bi}		base pressure measured at station i, i=1,2,4, psia
P_{EB_1}		pressure measured on Orbiter fuselage surface on left side vertical tail/fuselage juncture, psia

NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
P_{EB2}		pressure measured on Orbiter fuselage surface on right side vertical tail/fuselage juncture, psia
P_{S1}		pressure measured on left side of Orbiter strut S_1 , psia
P_{S2}		pressure measured on right side of Orbiter strut S_1 , psia
q	$Q(PSF)$	freestream dynamic pressure, psf
RN/ET	RN/L	freestream unit Reynolds no., 10^6 per foot
\bar{V}		mean freestream velocity, ft/sec
S	$SREF$	wing area or reference area, ft^2
WL	Z	water line, in
X		longitudinal Orbiter separation distance, measured from nominal mated position, ft
X_C	XC	carrier longitudinal station, in
X_{MRP}	$XMRP$	longitudinal location of MRC, in
X_O	XO	Orbiter longitudinal station, in
Y		Orbiter lateral separation distance, measured from nominal mated position, ft
Y_C	YC	carrier lateral station, in
Y_{MRP}	$YMRP$	lateral location of MRC, in
Y_O	YO	Orbiter lateral station, in
Z		Orbiter vertical separation distance, measured from nominal mated position, ft
Z_C	ZC	carrier vertical station, in

NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
Z_{MRP}	ZMRP	vertical location of MRC, in
Z_o	ZO	Orbiter vertical station, in
$1/(\Delta Z+10)$	$1/Z+10$	separation parameter, inverse of vertical separation distance plus 10 ft, per foot
α	ALPHA	angle of attack, deg.
α_C	ALPHAC	carrier fuselage angle of attack, $\alpha_w - 2^\circ$, deg.
α_0	ALPHAO	Orbiter angle of attack, deg.
α_w	ALPHAW	carrier wing angle of attack, $\alpha_c + 2^\circ$, deg.
α_{Wall}	ALPWAL	wind tunnel wall correction to carrier angle of attack, deg.
β	BETA	angle of sideslip, deg.
β_C	BETAC	carrier sideslip angle, deg.
β_0	BETA0	Orbiter sideslip angle, deg.
δ_a	AILRON	aileron deflection angle, deg.
δ_e	ELEVON	Orbiter elevon deflection angle, deg.
δ_{eI}	ELV-IB	inboard carrier elevator panel deflection angle, deg.
$\delta_{e\phi}$	ELV-OB	outboard carrier elevator panel deflection angle, deg.
δ_{ev}	ELEVTR	carrier elevator deflection angle, deg.
δ_r	RUDDER	carrier rudder deflection angle, deg.
δ_{rL}	RUD-L	carrier lower rudder panel deflection angle, deg.

NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
δ_{r_u}	RUD-U	carrier upper rudder panel deflection angle, deg.
δ_S		spoiler deflection angle, deg.
ΔC_A	DCA	incremental axial force coefficient
ΔC_D	DCD	incremental drag coefficient
ΔC_{ℓ_B}	DCBL	incremental body axis rolling moment coefficient
ΔC_{ℓ_S}	DCSL	incremental stability axis rolling moment coefficient
ΔC_L	DCL	incremental lift coefficient
ΔC_m	DCLM	incremental pitching moment coefficient
ΔC_{n_B}	DCYN	incremental body axis yawing moment coefficient
ΔC_{n_S}	DCLN	incremental stability axis yawing moment coefficient
ΔC_N	DCN	incremental normal force coefficient
ΔC_Y	DCY	incremental side force coefficient
ΔX	DX	Orbiter longitudinal separation distance from nominal mated position, ft
ΔY	DY	Orbiter lateral separation distance from nominal mated position, ft
ΔZ	DZ	Orbiter vertical separation distance from nominal mated position, ft
$\Delta \alpha$	DALFA	incremental angle of attack between Orbiter and carrier FRL, $\alpha_o - \alpha_c$, deg.

NOMENCLATURE (Concluded)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
$\Delta\beta$	DBETA	incremental angle of sideslip between Orbiter and carrier, $\beta_o - \beta_c$, deg.
$\Delta\phi$	DPHI	incremental roll angle between Orbiter and carrier, deg.
ϕ	PHI	Orbiter roll angle, deg.
C_{LC}	CL-C	carrier lift coefficient with test mounting system corrections
C_{DC}	CD-C	carrier drag coefficient with test mounting system corrections
C_{mC}	CLM-C	carrier pitching moment coefficient with test mounting system corrections
C_{YC}	CY-C	carrier side force coefficient with test mounting system corrections
C_{nBC}	CYN-C	carrier body yaw moment coefficient with test mounting system corrections
C_{nSC}	CLN-C	carrier stability yaw moment coefficient with test mounting system corrections
C_{lSC}	CSL-C	carrier stability roll moment coefficient with test mounting system corrections
C_{lBC}	CBL-C	carrier body roll moment coefficient with test mounting system corrections
C_{AC}	CA-C	carrier axial force coefficient with test mounting system corrections
C_{NC}	CN-C	carrier normal force coefficient with test mounting system corrections

REMARKS

The Orbiter axial force, measured during this test, exhibits the following trend:

- 1) at low angles of attack, axial force decreases with increasing angle of attack, as would normally be expected,
- 2) at high angles of attack, axial force increases with increasing angle of attack, contrary to normal expectations.

Extensive investigations and analysis, conducted during the test, indicated that trend number (2) was not caused by model fouling or other test problems and was, indeed, representative of aerodynamic characteristics.

Vertical tail pressure instrumentation (P_{EB1} and P_{EB2}) was disconnected during runs 588 through 599.

Configuration D (as described in figure 2f) was not at $\phi = 90^\circ$, as planned, because of support system deflections (caused by the Orbiter model touching strut S3).

CONFIGURATIONS INVESTIGATED

The Orbiter model was an 0.030-scale representation of the Space Shuttle Orbiter VL70-000140A/B lines with modified OMS pods and elevons as shown in figure 2a. The basic Orbiter is a blended wing-body design with a double delta wing (75° and 45° leading edge sweeps). The Orbiter model was tested both with and without a tail cone fairing. The tail cone fairing covered the MPS nozzles, OMS nozzles, and base, as shown in Figure 3b. The Orbiter model was mounted in the tunnel using several blade strut configurations as follows:

- S_1 = Orbiter support blade strut, upper entry position,
- S_2 = Orbiter support blade strut, lower entry position,
- S_3 = Orbiter dummy support blade strut.

Figure 2f shows the strut arrangements. Orbiter elevon and aileron deflection angles were varied. The Orbiter was tested both isolated and in the presence of the carrier at various separation locations. The following Orbiter configurations were tested:

- $O_1 = B_{26} C_9 E_{43} F_8 M_{16} W_{116} TC_{5.1}$
- $O_2 = B_{26} C_9 E_{43} F_8 M_{16} N_{28} N_{24} W_{116}$ (with strut S_1)
- $O_3 = B_{26} C_9 E_{43} F_8 M_{16} R_5 V_8 W_{116} TC_{5.1}$
- $O_4 = B_{26} C_9 E_{43} F_8 M_{16} W_{116} TC_{5.1}$
- $O_5 = B_{26} C_9 E_{43} F_8 M_{16} N_{28} N_{24} R_5 V_8 W_{116}$
- $O_6 = B_{26} C_9 E_{43} F_8 M_{16} N_{28} N_{24} R_5 V_8 W_{116}$ MPS cover plate off

CONFIGURATIONS INVESTIGATED (Continued)

$O_7 = B_{26} C_9 E_{43} F_8 M_{16} N_{28} R_5 V_8 W_{116}$ strut, S_2 cover plate #1 off MPS base plate off
 $O_8 = B_{26} C_9 E_{43} F_8 M_{16} N_{28} R_5 V_8 W_{116}$ strut, S_2 cover plate #2 off MPS base plate off
 $O_9 = B_{26} C_9 E_{43} F_8 M_{16} N_{28} N_{24} W_{116}$ (with strut S_2)

where:

<u>Component</u>	<u>Description</u>
B_{26}	Orbiter fuselage per Rockwell lines VL70-000140A/B, model drawing SS-A01360
C_9	Orbiter canopy per Rockwell lines VL70-000140A/B, model drawing SS-A01360
E_{43}	Orbiter full-span, unswept hingeline, 6" gapped elevons per Rockwell lines VL70-000200, model drawing SS-A01360
F_8	Orbiter body flap per Rockwell lines VL70-000200, model drawing SS-A01360
M_{16}	Orbiter OMS/RCS pods per Rockwell lines VL70-000203A, VL70-008401, model drawing SS-A01360
N_{24}	Orbiter main propulsion system (MPS) nozzles - VL70-000140A, VL70-005030A, model drawing SS-A01360
N_{28}	Orbiter OMS nozzles - VL70-000140A model drawing SS-A01360
R_5	Orbiter rudder per Rockwell lines VL70-000146A, model drawing SS-A01360
$TC_{5.1}$	Orbiter tail cone fairing which covers the MPS nozzles and the OMS nozzles and base, built by the Boeing Company, also used in CA5
V_8	Orbiter centerline vertical tail per Rockwell lines VL70-000146A, model drawing SS-A01360
W_{116}	Orbiter double delta wing per Rockwell lines VL70-000200, model drawing SS-A01360

CONFIGURATIONS INVESTIGATED (Continued)

Effects of simulated attach hardware were investigated using the following model components attached to the carrier.

- AT₃₈ Forward attach structure between the Orbiter and carrier model used for i_0 of 3 to 10 degrees for $\Delta Z = 0$ feet
- AT₃₉ Aft attach structure between the Orbiter and carrier model for $\Delta Z = 0$ feet

The carrier model was an 0.030-scale representation of the Boeing 737-100 aircraft with surface contours built to represent the 747 under loads it would experience with a 600,000 pound gross weight flying at Mach 0.86 at an altitude of 35,000 feet. The model also had a built in 0.64° leading edge up wing tip twist to compensate for model aeroelastic effects, which are estimated to produce a 0.64° leading edge down twist. The carrier had 200 square foot tip fins on its horizontal tail. Spoilers were deflected to 45° and flaps were retracted during most of the test. Several runs were made with spoilers retracted. Elevator and rudder deflections were varied during the test. The carrier was tested both isolated and in the presense of the Orbiter at various separation conditions. Carrier configurations investigated were:

$$747/0 = B_{27.8} F_0 H_{15.6} M_{26}^{25} N_{58}^{57} T_{19} V_{9.1} W_{44.1}$$

$$747/1 = B_{27.8} F_0 H_{15.6} M_{26}^{25} N_{58}^{57} S_{1-12} T_{19} V_{9.1} W_{44.1}, \delta_S = 45^\circ$$

where:

<u>Component</u>	<u>Description</u>
B _{27.8}	fuselage
F ₀	all flaps retracted

CONFIGURATIONS INVESTIGATED (Concluded)

$H_{15.6}$	horizontal tail (H_{15}) with 200 ft ² tip fins
M_{26}^{25}	inboard (M_{25}) and outboard (M_{26}) nacelle struts
N_{58}^{57}	inboard (N_{57}) and outboard (N_{58}) nacelles
S_{1-12}	12 spoiler panels located on wing upper surface, all deflected 45°
T_{19}	flap track fairing
$V_{9.1}$	vertical tail
$W_{44.1}$	wing

Orbiter base pressures were measured, for configurations without tail cone, at locations as shown by figure 2c. Pressures were measured on both sides of Orbiter support strut when S_1 was used and pressures were measured on the fuselage near the vertical tail when the vertical tail was installed as shown by figure 2d. Pressures were measured in the Orbiter and carrier balance cavity.

TEST FACILITY DESCRIPTION

The Boeing Transonic Wind Tunnel (BTWT) is a continuous flow, closed circuit, single return, atmospheric facility with the following characteristics:

<u>Test Section Flow Parameters</u>		<u>Test Section Dimensions</u>	
Freestream Condition	Range	Description	Value
Mach number	0 thru 1.15	Cross-section (minus	
Dynamic pressure, psia	0 thru 6.3	corner fillets), ft.	8 x 10
Static pressure, psia	15 to 5.4	Length, ft.	14.5
Stagnation pressure	atmospheric	Area, ft. ²	88
Maximum unit Reynolds number, per foot	4 x 10 ⁶		
Maximum total temperature, °F	160		

The test section can be operated with either solid or slotted walls. The slotted wall configuration consists of 16 slots which can vary wall porosity from 3.5% to 11%.

Test data acquisition, recording, computations, and display are done by an XDS-9300 computer and Astro data sub-system.

DATA REDUCTION

Force and moment data were reduced in both body and stability axes using standard Boeing data reduction procedures. The following data reduction constants were used:

<u>Symbol</u>	<u>Description</u>	<u>Carrier</u>		<u>Orbiter</u>	
		<u>Model Scale</u>	<u>Full Scale</u>	<u>Model Scale</u>	<u>Full Scale</u>
S	reference area, ft. ²	4.950	5500	2.421	2690.0
b	reference span, in	70.441	2348.04	28.100	936.68
\bar{c}	reference mac, in	9.833	327.78	14.244	474.81
MRC	moment reference center, in				
	XC or X0	40.197	1339.90	33.270	1109.0
	YC or Y0	0.0	0.0	0.0	0.0
	ZC or Z0	5.723	190.80	11.250	375.0

No base or cavity corrections were applied to the data.

Wind tunnel data were interpolated versus the applicable separation parameters (α_0 , ΔZ , ΔX , α_w , ΔY , β_0 , β_c , and ϕ) as summarized by Table VII. These interpolated data were used to compute interference increments by subtracting isolated data from interference data as summarized by Table VIII. A special interpolation routine was used for datasets with simulated attach hardware as summarized by Tables IX and X. Interpolated carrier data were corrected for support strut tare and interference using corrections obtained during test CA5 as summarized by Table XI. Basic data, interpolated data, incremental data, and carrier data with tare and interference corrections, are presented in this report. Tables IV through VI describe data presentation formats.

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Drawings

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1319-41, "Outbd Flap Brkts 20° Fg.2," dated 8-20-74

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TABLE I

[illegible]

TABLE II.

TEST: CA20		DATA SET/RUN NUMBER COLLATION SUMMARY											DATE: REV. 1/15/75			
DATA SET IDENTIFIER	CONFIGURATION	ORBITER											MACH NUMBERS			
						S ₀	S _a	α ₀	φ ₀	ΔX	ΔY	ΔZ	.3	.48	.5	.6
RG001	O ₁ S ₂ S ₃					5	0	Δ	-5	0	—	—	576	577		
02						5	0		0	0			575			
03						5	0		0	0						572
04	Y					5	0		0	0						574
05	O ₂ S ₂ S ₃					5	0		-5	0				578		
06	Y					5	0		0	0				580		579
07	O ₁ S ₁					5	0		-5	0			603			604
08						0	0		0	0						614
09						5	-10		0	0						613
10						5	0		0	0			615			616
11						10	0	Y	0	0		Y				612
12						5	0	10	-5	0		Δ				605
13						5	0	14	-5	0		Y				606
14	Y					5	0	7.5	Δ	-90		—				617
15	O ₂ S ₁					5	0	Δ	-5	0						607
16						0	0		0	0						609
17						5	-10		0	0						610
Y 18	Y					5	0	Y	0	0	Y	Y	Y			608

7131925313743495561677576

SEE TABLE V FOR COEFFICIENT SCHEDULES

α OR β SCHEDULES

Δ α_{FRL} = 0°, 2°, 4°, 6°, 8°, 10° { α_c = α_{FRL} COEFFICIENTS CARRIER = α_w - 2°

Δ α_c = -10°, -7°, -5°, -3°, -2°, -1°, 0°, 1°, 2°, 3°, 5°, 10°

Δ ΔZ = 0°, 3°, 7.5°, 15°, 30°, 45°, 60° FX.

Δ φ₀ = 2.5°, 0°, -2.5°, -5°, -7.5°, -10°, -15°

IDVAR (1) IDVAR (2) IDV

TEST RUN NUMBERS

SEE TABLE I FOR COEFFICIENT SCHEDULES

α OR β
 SCHEDULES $\Delta \alpha_{FRL} = 0^\circ, 2^\circ, 4^\circ, 6^\circ, 8^\circ, 10^\circ$ $\alpha_c = \alpha_{FRL} \text{ COEFFICIENTS}$
 $\Delta \phi_c = -10^\circ, -7^\circ, -5^\circ, -3^\circ, -2^\circ, -1^\circ, 0^\circ, 1^\circ, 2^\circ, 3^\circ, 5^\circ, 10^\circ$ CARRIER

$\Delta \Delta Z = 0^\circ, 3^\circ, 7.5^\circ, 15^\circ, 30^\circ, 45^\circ, 60^\circ$ IDVAR (1)
 $\Delta \phi_0 = 2.5^\circ, 0^\circ, -2.5^\circ, -5^\circ, -7.5^\circ, -10^\circ, -15^\circ$ IC, AR (2) ICV

$\Delta \alpha_0 = 6^\circ, 8^\circ, 10^\circ, 12^\circ, 14^\circ, 16^\circ, 18^\circ$
 * MINIMUM SEPARATION DISTANCE

NASA-MSFC-MAF

TABLE II. (Continued)

DATE: REV. 1/15/75

TEST: CA20

DATA SET/RUN NUMBER COLLATION SUMMARY

DATA SET IDENTIFIER	CONFIGURATION	ORBITER											MACH NUMBERS					
		S_e	S_a	S_r	α_0	θ_0	ϕ_0	ΔX	ΔY	ΔZ	.3	.48	.5	.6				
RGNO19	$O_2 S_1$					10	0	—	Δ	0	0	—	—	—				611
20	$O_3 S_2$					5	0	0		-5	0				597			595
21						5	0	0		0	0				592		593	594
22						5	0	0		0	0							591
23	\downarrow					5	0	15		0	0							589
24	$O_5 S_2$					5	0	0		-5	0							598
25						5	0	0		0	0							581
26	\downarrow					5	0	15		0	0							588
27	$O_6 S_2$					5	0	0		0	0							582
28	$O_7 S_2$					5	0	0		0	0							583
29	$O_8 S_2$					5	0	0		0	0							584
30						5	0	0		0	0							585
31						5	0	0		0	0							586
32	\downarrow					5	0	0		0	0							587
\downarrow 33	$O_9 S_2$					5	0	—	\downarrow	-5	0	\downarrow	\downarrow	\downarrow				599

TEST RUN NUMBERS

TEST RUN NUMBERS

COEFFICIENTS

IDVAR (1) IC: AR (2) DEV

α OR β
SCHEDULES

TABLE II. (Continued)

[illegible]

TABLE II. (Continued)

TEST: CA20		DATA SET/RUN NUMBER COLLATION SUMMARY												DATE: REV. 1/15/75			
DATA SET IDENTIFIER	CONFIGURATION	CARRIER				ORBITER								DO			
		α_c	β_c	δ_{ev}	δ_T	δ_e	δ_a	MACH	θ_0	ϕ_0	ΔX	ΔY	ΔZ	8	12	16	
RGNO40	747/O O ₁ S ₁ AT ₃₈ AT ₃₉	0	0	0/3	0	5	0	.6	0	0	0	0	0	619			
41		4	0	0/3	0	5	0	.6	0	0	0	0		621			
42		8	0	0/3	0	5	0	.6	0	0	0	0			620		
43	Y	4	-5	0/3	0	5	0	.6	-5	0	0	0		622			
44	747/O O ₂ S ₁ AT ₃₈ AT ₃₉	4	-5	0/3	0	5	0	.6	-5	0	0	0		623			
45	747/I O ₁ S ₁ AT ₃₈ AT ₃₉	0	0	0/3	0	5	0	.6	0	0	0	0	627				
46		4	0	0/3	0	5	0	.6	0	0	0	0		625			
47		8	0	0/3	0	5	0	.6	0	0	0	0			626		
Y 48	Y	4	-5	0/3	0	5	0	.6	-5	0	0	0	Y	624			

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICENTS
IDVAR (1) IDVAR (2) IDV

α OR β

SCHEDULES

TABLE II. (Continued)

TEST: CA20

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: REV. 1/15/75

DATA SET IDENTIFIER	CONFIGURATION	CARRIER							ORBITER							6 10 14			
		α_c	θ_c	δ_{ev}	δ_r	δ_e	δ_a	PLAC	θ_o	ϕ_o	ΔX	ΔY	ΔZ						
RGNO49	747/1 O, S, 1	0	0	0/3	0	5	0	0.6	0	0	0	0	A	631	628	630			
50		0	0	0/3	0	5	0	0.6	0	0	10	0		636	637	638			
51		0	0	0/3	0	5	0	0.6	0	0	20	0		641	640	639			
52		4	0	0/3	0	5	0	0.6	0	0	0	0		632	646	647			
53		4	0	0/3	0	5	0	0.6	0	0	10	0		635	694	693			
54		4	0	0/3	0	5	0	0.6	0	0	20	0		642	677	676			
55		8	0	0/3	0	5	0	0.6	0	0	0	0		633	645	644			
56		8	0	0/3	0	5	0	0.6	0	0	10	0		634	691	692			
57		8	0	0/3	0	5	0	0.6	0	0	20	0		643	674	675			
58		4	0	0/3	0	5	0	0.6	0	0	0	10		775	781				
59		4	0	0/3	0	5	0	0.6	0	0	10	10		735	738				
60		8	0	0/3	0	5	0	0.6	0	0	0	10		780	787				
61		8	0	0/3	0	5	0	0.6	0	0	10	10		736	737				
62		4	-5	0/3	0	5	0	0.6	0	0	0	0		649	648				
63		4	-5	0/3	0	5	0	0.6	0	0	10	0		687	688				
64		4	-5	0/3	0	5	0	0.6	0	0	20	0		670	671				
65		8	-5	0/3	0	5	0	0.6	0	0	0	0		650	651				
Y 66	Y	8	-5	0/3	0	5	0	0.6	0	0	10	0	Y	690	689				

17131925313743495561677576

COEFFICIENTS

IDVAR (1) IDVAR (2) IDVAR (3)

α OR β

SCHEDULES

TEST RUN NUMBERS

TABLE II. (Continued)

TEST: CA20		DATA SET/RUN NUMBER COLLATION SUMMARY												DATE: REV. 1/15/75		
DATA SET IDENTIFIER	CONFIGURATION	CARRIER				ORBITER								Do		
		α_c	β_c	δ_{av}	δ_r	δ_a	δ_a	MASS	θ_0	ϕ_0	ΔX	ΔY	ΔZ	6	10	14
RGNO67	747/1 0.51	8	-5	0/3	0	5	0	0.6	0	0	20	0	A		673	672
68		4	-5	0/3	0	5	0	0.6	0	0	0	10			776	782
69		4	-5	0/3	0	5	0	0.6	0	0	10	10			739	742
70		8	-5	0/3	0	5	0	0.6	0	0	0	10			779	786
71		8	-5	0/3	0	5	0	0.6	0	0	10	10			740	741
72		4	5	0/3	0	5	0	0.6	0	0	0	10			777	783
73		4	5	0/3	0	5	0	0.6	0	0	10	10			743	746
74		8	5	0/3	0	5	0	0.6	0	0	0	10			778	785
75		8	5	0/3	0	5	0	0.6	0	0	10	10			744	745
76		4	-5	0/3	0	5	0	0.6	0	7.5	0	0			700	699
77		4	-5	0/3	0	5	0	0.6	0	7.5	10	0			679	680
78		8	-5	0/3	0	5	0	0.6	0	7.5	0	0			701	698
79		8	-5	0/3	0	5	0	0.6	0	7.5	10	0			682	681
80		4	-5	0/3	0	5	0	0.6	0	7.5	0	10			791	792
81		4	-5	0/3	0	5	0	0.6	0	7.5	10	10			752	755
82		8	-5	0/3	0	5	0	0.6	0	7.5	0	10			798	797
83		8	-5	0/3	0	5	0	0.6	0	7.5	10	10			753	754
Y 84	Y	4	0	0/3	0	5	0	0.6	0	7.5	0	0	Y		705	704
<div> <div>17</div> <div>1</div> <div>7</div> <div>13</div> <div>19</div> <div>25</div> <div>31</div> <div>37</div> <div>43</div> <div>49</div> <div>55</div> <div>61</div> <div>67</div> <div>73</div> <div>79</div> </div>																
<div> <div>COEFFICIENTS</div> <div>IDVAR (1)</div> <div>IDVAR (2)</div> <div>IDV</div> </div>																
<div> <div> <div>α OR β</div> <div>SCHEDULES</div> </div> </div>																

TABLE II. (Continued)

TEST: CA20		DATA SET/RUN NUMBER COLLATION SUMMARY												DATE: REV. 1/15/75		
DATA SET IDENTIFIER	CONFIGURATION	CARRIER				ORBITER								000		
		α_c	β_c	δ_{ev}	δ_T	δ_e	δ_a	MACH	δ_o	δ_p	ΔX	ΔY	ΔZ	G	10	14
RCNO85	747/1 OIS,	4	0	0/3	0	5	0	0.6	0	7.5	10	0	A		686	685
86		8	0	0/3	0	5	0	0.6	0	7.5	0	0			702	703
87		8	0	0/3	0	5	0	0.6	0	7.5	10	0			683	684
88		4	0	0/3	0	5	0	0.6	0	7.5	0	10			790	793
89		4	0	0/3	0	5	0	0.6	0	7.5	10	10			748	751
90		8	0	0/3	0	5	0	0.6	0	7.5	0	10			799	796
91		8	0	0/3	0	5	0	0.6	0	7.5	10	10			749	750
92		4	5	0/3	0	5	0	0.6	0	7.5	0	10			789	794
93		4	5	0/3	0	5	0	0.6	0	7.5	10	10			756	759
94		8	5	0/3	0	5	0	0.6	0	7.5	0	10			800	795
95		8	5	0/3	0	5	0	0.6	0	7.5	10	10			757	758
96		4	-5	0/3	0	5	0	0.6	-5	7.5	0	10			804	805
97		8	-5	0/3	0	5	0	0.6	-5	7.5	0	10			811	810
98		4	0	0/3	0	5	0	0.6	-5	7.5	0	10			803	806
99		8	0	0/3	0	5	0	0.6	-5	7.5	0	10			812	809
100		4	5	0/3	0	5	0	0.6	-5	7.5	0	10			802	807
101		8	5	0/3	0	5	0	0.6	-5	7.5	0	10			813	808
V 102	V	4	-5	0/3	0	5	0	0.6	-5	7.5	0	10	V			815
<div> <div>1</div> <div>7</div> <div>13</div> <div>19</div> <div>25</div> <div>31</div> <div>37</div> <div>43</div> <div>49</div> <div>55</div> <div>61</div> <div>67</div> <div>75</div> <div>76</div> </div>																
<div> <div>COEFFICIENTS</div> <div>IDVAR (1)</div> <div>IDVAR (2)</div> <div>IDV</div> </div>																
<div> <div>α OR β</div> <div>SCHEDULES</div> </div>																

TEST RUN NUMBERS

TABLE II. (Continued)

TEST: CA20		DATA SET/RUN NUMBER COLLATION SUMMARY													DATE: REV. 1/15/75				
DATA SET IDENTIFIER	CONFIGURATION	CARRIER				ORBITER										DO			
		α_c	β_c	δ_{ev}	δ_r	δ_e	δ_a	MACH		θ_0	ϕ_0	ΔX	ΔY	ΔZ	6	10	14		
RGN103	747/1 O, S ₁	4	0	0/3	0	5	0	0.6		-5	7.5	0	10	A			814		
104		4	-5	0/3	0	5	0	0.6		-5	0	10	0			830	935		
105		8	-5	0/3	0	5	0	0.6		-5	0	10	0			841	836		
106		4	-5	0/3	0	5	0	0.6		-5	0	0	10			844			
107		4	-5	0/3	0	5	0	0.6		-5	0	10	10			819	820		
108		8	-5	0/3	0	5	0	0.6		-5	0	10	10			828	823		
109		4	0	0/3	0	5	0	0.6		-5	0	10	0			831	834		
110		8	0	0/3	0	5	0	0.6		-5	0	10	0			840	837		
111		4	0	0/3	0	5	0	0.6		-5	0	0	10			843			
112		4	0	0/3	0	5	0	0.6		-5	0	10	10			818	821		
113		8	0	0/3	0	5	0	0.6		-5	0	0	10				846		
114		8	0	0/3	0	5	0	0.6		-5	0	10	10			827	824		
115		4	5	0/3	0	5	0	0.6		-5	0	10	0			832	833		
116		8	5	0/3	0	5	0	0.6		-5	0	10	0			839	838		
117		4	5	0/3	0	5	0	0.6		-5	0	0	10			845			
118		4	5	0/3	0	5	0	0.6		-5	0	10	10			817	822		
119		8	5	0/3	0	5	0	0.6		-5	0	10	10			826	825		
Y 120	Y	4	-5	0	0	5	0	0.6		-5	0	0	10	Y		765	768		
		1	7	13	19	25	31	37	43	49	55	61	67	75	76				
COEFFICIENTS																			
IDVAR (1) ICVAR (2) ICV																			
α OR β																			
SCHEDULES																			

TABLE II. (Continued)

TEST: CA20		DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: REV. 1/15/75							
DATA SET IDENTIFIER	CONFIGURATION	CARRIER				ORBITER										TEST RUN NUMBERS			
		α_c	β_c	δ_{cv}	δ_r	δ_e	δ_a	MACH	θ_0	ϕ_0	ΔX	ΔY	ΔZ	6	10	14			
RCN121	747/1 0, S1	8	-5	0	0	5	0	0.6	-5	0	0	10	4		766	767			
122		4	0	0	0	5	0	0.6	-5	0	0	10			761	764			
123		8	0	0	0	5	0	0.6	-5	0	0	10			762	763			
124		4	5	0	0	5	0	0.6	-5	0	0	10			769	772			
125	Y	8	5	0	0	5	0	0.6	-5	0	0	10			770	771			
126	747/1 0, S1	4	-5	0/3	0	5	0	0.6	0	0	0	0			656				
127		4	-5	0/3	0	5	0	0.6	0	0	10	0			657				
128		4	-5	0/3	0	5	0	0.6	0	0	20	0			669				
129		4	0	0/3	0	5	0	0.6	0	0	0	0			652	653			
130		4	0	0/3	0	5	0	0.6	0	0	10	0			661	659			
131		4	0	0/3	0	5	0	0.6	0	0	20	0			665	666			
132		8	0	0/3	0	5	0	0.6	0	0	0	0			655	654			
133		8	0	0/3	0	5	0	0.6	0	0	10	0			658	660			
134		8	0	0/3	0	5	0	0.6	0	0	20	0			668	667			
135		4	-5	0/3	0	5	0	0.6	0	0	0	10			728				
136		4	-5	0/3	0	5	0	0.6	0	0	10	10			732				
137		4	0	0/3	0	5	0	0.6	0	0	0	10			727				
Y 138	Y	4	0	0/3	0	5	0	0.6	0	0	10	10	Y		731				
		1	7	13	19	25	31	37	43	49	55	61	67	73	76				
COEFFICIENTS																	IDVAR (11)	IC, AR (21)	ICV
α OR β																			
SCHEDULES																			

TABLE II. (Continued)

TEST: CA20

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: REV. 1/15/75

DATA SET IDENTIFIER	CONFIGURATION	CARRIER						ORBITER						TEST RUN NUMBERS		
		δ_c	δ_{ev}	δ_r	δ_e	δ_a	MACH	ϕ_0	ϕ_0	ΔX	ΔY	ΔZ	6	10	14	
RCN139	747/1 O ₂ S ₁	4	5	0/3	0	5	0	0.6	0	0	0	10	4	729		
140	↓	4	5	0/3	0	5	0	0.6	0	0	10	10		733		
141	747/1 O ₁ S ₁	4	0	10/13	0	5	0	0.6	0	0	0	0		707	708	
142		4	0	10/13	0	5	0	0.6	0	0	0	0		709	710	
143	↓	4	0	0/3	15	5	0	0.6	0	0	0	0		711	712	
144	747/1 O ₂ S ₁	4	0	0/3	15	5	0	0.6	0	0	0	0		725		
145	747/1 O ₁ S ₁	4	0	0/3	0	0	0	0.6	0	0	0	0		719	720	
146		4	0	0/3	0	10	0	0.6	0	0	0	0		714	715	
147		4	0	0/3	0	10	0	0.3	0	0	0	0		717		
148		4	0	0/3	0	10	0	0.7	0	0	0	0		716		
149	↓	4	0	0/3	0	5	-10	0.6	0	0	0	0	↓	722	723	

TABLE II. - DATA SET/RUN NUMBER COLLATION SUMMARY
(Continued)

Symbol Definition

Orbiter

0_1 = Vertical tail off (V_8) Tail cone on (TC5.1)	0_5 = Vertical tail on (V_8) Tail cone off
0_2 = Vertical tail off (V_8) Tail cone off with strut S_1	0_6 = MPS base plate off Vertical tail on (V_8)
0_3 = Vertical tail on (V_8) Tail cone on (TC5.1)	0_7 = MPS base plate off, S_2 cover plate #1 off, Vertical tail on
0_4 = Tail cone on (TC5.1) Vertical Tail simulating dummy strut	0_8 = MPS base plate off, S_2 cover plate #2 off, Vertical tail on
	0_9 = MPS base plate on, Vertical tail off with strut S_2

Orbiter Support Strut

S_1 = Orbiter support blade strut, upper entry position
S_2 = Orbiter support blade strut, lower entry position
S_3 = Orbiter dummy support blade strut

Carrier

747/0 = Carrier with spoilers and flaps retracted
747/1 = Carrier with spoilers deflected 45° and flaps retracted

α , β , and ΔZ Schedules

$\Delta \alpha_c = 0^\circ, 2^\circ, 4^\circ, 6^\circ, 8^\circ, 10^\circ$
$\Delta \beta_c = -10^\circ, -7^\circ, -5^\circ, -3^\circ, -2^\circ, -1^\circ, 0^\circ, +1^\circ, +2^\circ, +3^\circ, +5^\circ, +10^\circ$
$\Delta \alpha_0 = 6^\circ, 8^\circ, 10^\circ, 12^\circ, 14^\circ, 16^\circ, 18^\circ$

TABLE II. (Concluded)

$$\triangle \Delta Z = 0^{\circ}, 3^{\circ}, 7.5^{\circ}, 15^{\circ}, 30^{\circ}, 45^{\circ}, 60^{\circ}$$

$$\triangle \beta_0 = 2.5^{\circ}, 0^{\circ}, -2.5^{\circ}, -5^{\circ}, -7.5^{\circ}, -10^{\circ}, -15^{\circ}$$

* minimum attainable

Table III. - MODEL DIMENSIONAL DATA
A. Carrier Model

MODEL COMPONENT: BODY - B_{27.8}

GENERAL DESCRIPTION: Body 74-7 Project with A.P.V.

Model Scale: 0.03

Drawing Number: 65-69716

<u>Dimensions:</u>	<u>Full Scale</u>	<u>Model Scale</u>
Length, in	<u>2702</u>	<u>81.06</u>
Max. Width, in	<u></u>	<u>7.66</u>
Area		
Wetted, ft ²	<u></u>	<u>12.71</u>

Table IIIA - Continued.

MODEL COMPONENT: F₀

GENERAL DESCRIPTION Clean Wing

Flaps Up

Table IIIA - Continued

MODEL COMPONENT: Horizontal Tail H15.6

GENERAL DESCRIPTION: Horizontal Tail with Vertical Fins on each

Tip at Body B. L. 12.82

Model Scale 0.03

Drawing Number 1319-55 1/2 - 60

<u>Dimension:</u>	<u>Full Scale</u>	<u>Model Scale</u>
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EXPOSED DATA (one side)

Area-ft ²	<u>200</u>	
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Table IIIA - Continued.

MODEL COMPONENT: M₂₅

GENERAL DESCRIPTION: Inboard 747, JT9D nacelle strut

Model Scale: 0.03

Dimensions

	<u>Full Scale</u>	<u>Model Scale</u>
Wing B.L. of nacelle C _L , in.	<u>470.0</u>	<u>14.100</u>
Cont angle deg. inboard	<u>2</u>	<u>2</u>

TABLE IIIA - Continued

MODEL COMPONENT: M₂₆

GENERAL DESCRIPTION: Outboard 747, JT9D

Strut

Model Scale: 0.03

Drawing Number: 937-590

<u>Dimensions</u>	<u>Full Scale</u>	<u>Model Scale</u>
W L of C _L , in	<u> </u>	<u>25.020</u>
Cant angle, deg inboard	<u>2</u>	<u>2</u>

Table IIIA - Continued.

MODEL COMPONENT: N₅₇

GENERAL DESCRIPTION Inboard Fan Cowl and Primary 747 Nacelle,
Flow Through Type

Model Scale: 0.03

Drawing Number: S.O. 1007-96-97

Table IIIA - Continued

MODEL COMPONENT: N₅₈

GENERAL DESCRIPTION: Outboard Fan Cowl and Primary 747 Nacelle,
Flow Through Type

Model Scale: 0.03

Drawing Number S.O. 1.007-96,-97

Table IIIA - Continued.

MODEL COMPONENT: Spoilers S_{1-12}

GENERAL DESCRIPTION: Multi-panel flight spoilers. Four outboard and two inboard spoiler per side. Subscript denotes spoiler panel S_1 is the most outboard L.H. panel and S_{12} is most outboard R.H. panel.

747 Model Scale: 0.03 Model: 1065

Drawing No.: 65-71450, S.D. 1065-51, -59, -81, -173

Dimensions: (One panel)	<u>Full Scale</u> <u>Ft.</u>	<u>Model Scale</u> <u>IN.</u>
Outboard S_{1-4} and S_{9-12} (Ft^2)	<u>21.48</u>	<u>0.019 ft^2</u>
Span (equivalent)	<u>6.25</u>	<u>2.25</u>
Chord	<u>3.44</u>	<u>1.238</u>
Inboard S_{5-6} and S_{7-8} (Ft^2)	<u>35.31</u>	<u></u>
Span (equivalent)	<u>7.50</u>	<u>2.70</u>
Chord	<u>4.71</u>	<u>1.696</u>

Table IIIA - Continued

MODEL COMPONENT: T₁₉
 GENERAL DESCRIPTION: Flap Track Fairings,
4 on each side
 Model Scale: 0.03
 Drawing Number: S.O. 1007-403

<u>DIMENSIONS</u>	<u>Full Scale</u>	<u>Model Scale</u>
WBL of Track no. 1, in.	<u>235.3</u>	<u>7.06</u>
2, in.	<u>353.0</u>	<u>10.59</u>
3, in.	<u>652.0</u>	<u>19.56</u>
4, in	<u>743.6</u>	<u>22.31</u>
Distance from wing	<u>50.0</u>	<u>1.5</u>
Trailing edge to:		
Track Trailing		
edge, in.		

Table IIIA - Continued.

MODEL COMPONENT: Vertical ^V9.1

GENERAL DESCRIPTION: Swept Vertical Tail

Model Scale: 0.03

Drawing Number: 65-6.9716; 1007-26,-610; 937-319

<u>Dimensions:</u>	<u>Full Scale</u>	<u>Model Scale</u>
TOTAL DATA		
Area (Theo) -- Ft ²	<u>630.0</u>	<u>.567</u>
Span (theo) - In.	<u>386.5</u>	<u>11.595</u>
Sweep-Back Angles, Degrees		
Leading Edge	<u>50.12</u>	<u>50.12</u>
Chords:		
Root (Theo) WP-in.	<u>461.67</u>	<u>13.85</u>
Tip (Theo) WP-in.	<u>157.0</u>	<u>4.71</u>
Cus. Sta. of .25 MAC	<u>2529.6</u>	<u>75.888</u>

Table IIIA - Continued.

MODEL COMPONENT: WING-^W44.1

GENERAL DESCRIPTION: Swept 747 Wing

Model Scale: 0.03

Test No.

DWG. No. 65-89585

<u>Dimensions:</u>	<u>Full Scale</u>	<u>Model Scale</u>
<u>Total Data</u>		
Area (Theo.) Ft ² Planform	<u>5500</u>	<u>4.95</u>
Span (Theo In.	<u>2348.04</u>	<u>70.441</u>
Aspect Ratio	<u>6.96</u>	<u>6.96</u>
Incidence Angle, degrees	<u>7</u>	<u>7</u>
Chords:		
MAC	<u>327.78</u>	<u>9.833</u>
Fus. Sta. of .25 MAC	<u>1339.90</u>	<u>40.197</u>
W.P. of .25 MAC	<u>190.80</u>	<u>5.723</u>

TABLE IIIA - Continued.

MODEL COMPONENT: ATTACH STRUCTURE - AT₃₈

GENERAL DESCRIPTION: Orbiter to carrier forward attach
struts.

MODEL SCALE: 0.030

DRAWING NO.: BOEING 1319-43

DIMENSIONS:	SCALE	
	FULL	MODEL
AT ₃₈	15.5	0.465
AT _{38.1}	91.67	2.75
AT _{38.2}	75.00	2.25
AT _{38.2A}	75.0	2.25
AT _{38.3}	ROD REMOVED	ROD REMOVED

TABLE IIIA - Concluded.

MODEL COMPONENT: ATTACH STRUCTURE - AT₃₉

GENERAL DESCRIPTION: Orbiter to carrier aft attachment, pitch adjustable from 0 to 10 deg.

MODEL SCALE: 0.030

DRAWING NO.: Boeing 50 1319-37.

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Pivot location:		
In., X _C	400.0	12.0
In., Z _C	160.7	4.821
Equivalent Span (At 0 deg i _{orb}):		
Centerline orbiter	521.0	15.63

TABLE III MODEL DIMENSIONAL DATA
B. Orbiter

MODEL COMPONENT : BODY - B₂₆

GENERAL DESCRIPTION : Configuration 140A/B orbiter fuselage.

NOTE: B₂₆ is identical to B₂₄ except underside of fuselage has been
refaired to accept W₁₁₆.

MODEL SCALE: 0.030 MODEL DWG: SS-A00147, Release 12

DRAWING NUMBER: VL70-000143B, -000200, -000205, -006089, -000145
VL70-000140A, -000140B

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OML: Fwd Sta X _O = 235), In.	1293.3	38.799
Length (IML: Fwd Sta X _O = 238), In.	1290.3	38.709
Max Width (At X _O = 1528.3), In.	264.0	7.920
Max Depth (At X _O = 1464), In.	250.0	7.500
Fineness Ratio	0.264	0.264
Area - Ft ²		
Max. Cross-Sectional	340.88	0.307
Planform		
Wetted		
Base		

TABLE IIIB - Continued.

MODEL COMPONENT : CANOPY - C₉

GENERAL DESCRIPTION : Configuration 3A. Canopy used with fuselage B₂₆

MODEL SCALE: 0.030 MODEL DWG: SS-A00147, Release 12

DRAWING NUMBER : VL70-000143A

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length ($X_O = 434.643$ to 578), In.	<u>143.357</u>	<u>4.301</u>
Max Width (At $X_O = 513.127$), In.	<u>152.412</u>	<u>4.572</u>
Max Depth (At $X_O = 485.0$), In.	<u>25.00</u>	<u>0.750</u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE IIIB - Continued.

MODEL COMPONENT: SLOTTED ELEVON (6 INCH GAP) - E₄₃GENERAL DESCRIPTION: Configuration 140A/B orbiter elevon.NOTE: E₄₃ is a slotted version of E₂₆. Data are for one side.MODEL SCALE: 0.030DRAWING NUMBER: VL70-000200, -006089, -006092DIMENSIONS:

	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - Ft ²	<u>210.00</u>	<u>0.189</u>
Span (equivalent) , In.	<u>349.2</u>	<u>10.476</u>
Inb'd equivalent chord , In.	<u>118.004</u>	<u>3.540</u>
Outb'd equivalent chord, In.	<u>55.192</u>	<u>1.656</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.2096</u>	<u>0.2096</u>
At Outb'd equiv. chord	<u>0.4004</u>	<u>0.4004</u>
Sweep Back Angles, degrees		
Leading Edge	<u>0.00</u>	<u>0.00</u>
Tailing Edge	<u>-10.056</u>	<u>-10.056</u>
Hingeline	<u>0.00</u>	<u>0.00</u>
(Product of Area & \bar{c})		
Area Moment (Normal to hingeline), Ft ³	<u>1587.25</u>	<u>0.043</u>
Mean Aerodynamic Chord , In.	<u>90.7</u>	<u>2.721</u>

TABLE IIIB - Continued.

MODEL COMPONENT : BODY FLAP - F₈

GENERAL DESCRIPTION : Configuration 140A/B orbiter body flap

NOTE: Hingeline located at X_o = 1528.3, Z_o = 284.3

MODEL SCALE: 0.030 MODEL DWG: SS-A00147, Release 12

DRAWING NUMBER : VL70-000140A, -000145

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (X _o =1520 - 1613) In.	<u>93.00</u>	<u>2.79</u>
Max Width , IN.	<u>262.00</u>	<u>7.86</u>
Max Depth (X _o = 1520), In.	<u>23.00</u>	<u>0.69</u>
Fineness Ratio	<u> </u>	<u> </u>
Area - Ft ²	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u>150.525</u>	<u>0.1355</u>
Wetted	<u> </u>	<u> </u>
Base	<u>41.847</u>	<u>0.0377</u>

TABLE IIIB - Continued.

MODEL COMPONENT : OMS POD - M₁₆

GENERAL DESCRIPTION : Configuration 140C

Orbiter OMS pod - Short pod

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-008401, -008410

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta. $X_O = 1310.5$)	<u>258.50</u>	<u>7.755</u>
Max Width (At $X_O = 1511$), In.	<u>136.8</u>	<u>4.104</u>
Max Depth (At $X_O = 1511$), In.	<u>74.70</u>	<u>2.241</u>
Fineness Ratio	<u>2.484</u>	<u>2.484</u>
Area - Ft ²	<u></u>	<u></u>
Max. Cross-Sectional	<u>58.864</u>	<u>0.053</u>
Planform	<u></u>	<u></u>
Wetted	<u></u>	<u></u>
Base	<u></u>	<u></u>

TABLE IIIB - Continued.

MODEL COMPONENT: MPS NOZZLES - N₂₄GENERAL DESCRIPTION: Configuration 140A/B orbiter MPS nozzlesMODEL SCALE: 0.030

MODEL DWG: SS-A00147, Release 12

DRAWING NUMBER: VL70-005030A, -000140A

DIMENSIONS:

FULL SCALEMODEL SCALE

MACH NO.

Length - In.

Gimbal Point to Exit Plane
Throat to Exit Plane157.004.7199.22.976

Diameter - In.

Exit
Throat
Inlet91.002.73Area - ft²Exit
Throat45.1660.0407

Gimbal Point (Station) - In.

Upper Nozzle

X
Y
Z1445.0043.350.00.0443.0013.29

Lower Nozzles

X
Y
Z1468.17044.045±53.00± 1.59342.64010.279

Null Position - Deg.

Upper Nozzle

Pitch
Yaw161600

Lower Nozzle

Pitch
Yaw10103.53.5ORIGINAL PAGE IS
OF POOR QUALITY

TABLE IIIB - Continued.

MODEL COMPONENT: OMS NOZZLES - N₂₈

GENERAL DESCRIPTION: Configuration 140A/B orbiter OMS Nozzles

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000140A (Location), SS-A00106, Release 5 (Contour)

DIMENSIONS:	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane		
Throat to Exit Plane		
Diameter - In.		
Exit		
Throat		
Inlet		
Area - ft ²		
Exit		
Throat		
Gimbal Point (Station) - In.		
Left Upper Nozzle		
X _o	<u>1518.00</u>	<u>45.54</u>
Y _o	<u>-88.0</u>	<u>-2.64</u>
Z _o	<u>492.0</u>	<u>14.76</u>
Right Lower Nozzles		
X _o	<u>1518.0</u>	<u>45.54</u>
Y _o	<u>88.0</u>	<u>2.64</u>
Z _o	<u>492.0</u>	<u>14.76</u>
Null Position - Deg.		
Left Upper Nozzle		
Pitch	<u>±8</u>	<u>±8</u>
Yaw	<u>13° 17' Outb'd, 2° 30' Inb'd</u>	<u>Same</u>
Right Lower Nozzle		
Pitch	<u>±8</u>	<u>±8</u>
Yaw	<u>13° 17' Outb'd, 2° 17' Inb'd</u>	

TABLE IIIB - Continued.

MODEL COMPONENT: RUDDER - R₅

GENERAL DESCRIPTION: Configuration 140C orbiter rudder (identical to configuration 140A/B rudder)

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000146B, -000095

DIMENSIONS:

	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - Ft ²	<u>100.15</u>	<u>0.090</u>
Span (equivalent), In.	<u>201.00</u>	<u>6.03</u>
Inb'd equivalent chord, In.	<u>91.585</u>	<u>2.748</u>
Outb'd equivalent chord, In.	<u>50.833</u>	<u>1.525</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees		
Leading Edge		
Tailing Edge	<u>26.25</u>	<u>26.25</u>
Hingeline (Product of area and \bar{c})	<u>34.83</u>	<u>34.83</u>
Area Moment (\bar{x} to Hingeline), Ft ³	<u>610.92</u>	<u>0.0165</u>
Mean Aerodynamic Chord, Inches	<u>73.2</u>	<u>2.196</u>

TABLE IIIB - Continued.

MODEL COMPONENT : ORBITER TAILCONE - TC_{5.1}

GENERAL DESCRIPTION : Fairing mounted on orbiter fuselage base for ferry missions.

MODEL SCALE: 0.030

DRAWING NUMBER : Boeing Dwg No.: 1319-71

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length	<u>445.83</u>	<u>13.375</u>
Max Width	<u>303.33</u>	<u>9.10</u>
Max Depth Height	<u>265.00</u>	<u>7.95</u>
Fineness Ratio	<u></u>	<u></u>
Area - Ft ²	<u></u>	<u></u>
Projected frontal area	<u>324.105</u>	<u>0.2917</u>
Max. Cross-Sectional	<u></u>	<u></u>
Planform	<u></u>	<u></u>
Wetted	<u></u>	<u></u>
Base	<u></u>	<u></u>

TABLE IIIB - Continued.

MODEL COMPONENT: VERTICAL - V₈GENERAL DESCRIPTION: Configuration 140A/B orbiter vertical tailMODEL SCALE: 0.030

MODEL DWG: SS-A00148, Release 6

DRAWING NUMBER: VL70-000146A

DIMENSIONS:

FULL SCALEMODEL SCALE

TOTAL DATA

Area (Theo) - Ft ²		
Planform	<u>413.253</u>	<u>0.372</u>
Span (Theo) - In.	<u>315.720</u>	<u>9.472</u>
Aspect Ratio	<u>1.675</u>	<u>1.675</u>
Rate of Taper	<u>0.507</u>	<u>0.507</u>
Taper Ratio	<u>0.404</u>	<u>0.404</u>
Sweep-Back Angles, Degrees.		
Leading Edge	<u>45.000</u>	<u>45.000</u>
Trailing Edge	<u>26.25</u>	<u>26.25</u>
0.25 Element Line	<u>41.13</u>	<u>41.13</u>
Chords:		
Root (Theo) WP	<u>268.50</u>	<u>8.055</u>
Tip (Theo) WP	<u>108.47</u>	<u>3.254</u>
MAC	<u>199.81</u>	<u>5.994</u>
Fus. Sta. of .25 MAC	<u>1463.35</u>	<u>43.901</u>
W.P. of .25 MAC	<u>635.52</u>	<u>19.066</u>
B.L. of .25 MAC	<u>0.00</u>	<u>0.00</u>
Airfoil Section		
Leading Wedge Angle - Deg.	<u>10.00</u>	<u>10.00</u>
Trailing Wedge Angle - Deg.	<u>14.92</u>	<u>14.92</u>
Leading Edge Radius	<u>2.00</u>	<u>0.060</u>
Void Area	<u>13.17</u>	<u>0.119</u>
Blanketed Area	<u>0.00</u>	<u>0.00</u>

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TABLE IIIB - Concluded.

MODEL COMPONENT: WING-W₁₁₆GENERAL DESCRIPTION: Configuration 4NOTE: Identical to W₁₁₄ except airfoil thickness. Dihedral angle is along trailing edge of wing. Geometric twist = 0.MODEL SCALE: 0.030

TEST NO.

DWG. NO. VL70-000140A, -000200

DIMENSIONS:

FULL-SCALE

MODEL SCALE

TOTAL DATA

Area (Theo.) Ft²

Planform

2690.00

2.421

Span (Theo) In.

936.68

28.10

Aspect Ratio

2.265

2.265

Rate of Taper

1.177

1.177

Taper Ratio

0.200

0.200

Dihedral Angle, degrees

3.500

3.500

Incidence Angle, degrees

0.500

0.500

Aerodynamic Twist, degrees

Sweep Back Angles, degrees

Leading Edge

45.00

45.00

Trailing Edge

- 10.056

- 10.056

0.25 Element Line

35.209

35.209

Chords:

Root (Theo) B.P.O.O.

689.24

20.677

Tip, (Theo) B.P.

137.85

4.136

MAC

474.81

14.244

Fus. Sta. of .25 MAC

1136.83

34.105

W.P. of .25 MAC

290.58

8.717

B.L. of .25 MAC

182.13

5.464

EXPOSED DATA

Area (Theo) Ft²

1751.50

1.576

Span, (Theo) In. BP108

720.68

21.620

Aspect Ratio

2.059

2.059

Taper Ratio

0.245

0.245

Chords

Root BP108

562.09

16.863

Tip 1.00 $\frac{b}{2}$

137.85

4.136

MAC

392.83

11.785

Fus. Sta. of .25 MAC

1185.98

35.579

W.P. of .25 MAC

294.30

8.829

B.L. of .25 MAC

251.77

7.553

Airfoil Section (Rockwell Mod NASA)
XXXX-64Root $\frac{b}{2}$ =

0.113

0.113

Tip $\frac{b}{2}$ =

0.120

0.120

Data for (1) of (2) Sides

Leading Edge Cuff

Planform Area Ft²

113.18

0.102

Leading Edge Intersects Fus M. L. @ Sta

500.00

15.00

Leading Edge Intersects Wing @ Sta

1024.00

30.72

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Table IV.
CA20 DATASET DESCRIPTION
(Raw Data)

DATASET TYPE	DESCRIPTION
RGNXXX	Longitudinal coefficient schedule for 747 carrier balance data which contain "standard" wind tunnel corrections.
AGNXXX	Lateral coefficient schedule for 747 carrier balance data which contain "standard" wind tunnel corrections.
BGNXXX	Longitudinal coefficient schedule for orbiter balance data which contain "standard" wind tunnel corrections.
CGNXXX	Lateral coefficient schedule for orbiter balance data which contain "standard" wind tunnel corrections.
DGNXXX	<p>Pressure coefficient data as follows:</p> <p>Q(PSF) - dynamic pressure, psf</p> <p>PB1, PB2, PB3 - orbiter base pressure coefficients</p> <p>PCAV - orbiter cavity pressure coefficient</p> <p>PSC - carrier cavity pressure coefficient</p> <p>LHLS, RHLS - left and right hand pressure coefficients in proximity to orb. vert. tail for blade/sting support system.</p> <p>LHVERT, RHVERT - identical to LHLS and RHLS but for base sting support system.</p>

Table V.
CA20 COEFFICIENT SCHEDULE
(Raw Data)

Dataset Type	Dataset Sequence	1st ID	2nd ID	Coefficients									
				1	2	3	4	5	6	7	8	9	10
RGNXXX	034-036	MACH	ALPHAW	BETA	Q(PSF)	CL	CD	CLM	CY	CLN	CSL		
	037	MACH	ALPHAO	ALPHAW	BETA	DY	DZ	CL	CD	CLM	CY	CLN	CSL
	038 & 039	MACH	BETA	ALPHAW	ALPHAO	DY	DZ	CL	CD	CLM	CY	CLN	CSL
	040-149	ALPHAO	DZ	MACH	DX	DY	BETA0	PHI	ALPHAW	BETA	CL	CD	CLM
AGNXXX	040-149	ALPHAO	DZ	MACH	DX	DY	BETA0	PHI	ALPHAW	BETA	CY	CLN	CSL
BGNXXX	001-011 & 015-033 & 037	MACH	ALPHAO	BETA0	PHI	Q(PSF)	CL	CD	CLM	CY	CLN	CSL	
	012 & 013	MACH	DZ	ALPHAO	BETA0	PHI	Q(PSF)	CL	CD	CLM	CY	CLN	CSL
	014	MACH	BETA0	ALPHAO	PHI	Q(PSF)	CL	CD	CLM	CY	CLN	CSL	
	038 & 039	MACH	BETA	ALPHAW	ALPHAO	DY	DZ	CL	CD	CLM	CY	CLN	CSL
	040-149	ALPHAO	DZ	MACH	DX	DY	BETA0	PHI	ALPHAW	BETA	CL	CD	CLM
CGNXXX	040-149	ALPHAO	DZ	MACH	DX	DY	BETA0	PHI	ALPHAW	BETA	CY	CLN	CSL
DGNXXX	001-011 & 015-019 & 037	MACH	ALPHAO	Q(PSF)	PB1	PB2	PB4	LHLS	RHLS	PCAV			
	012 & 013	MACH	DZ	Q(PSF)	PB1	PB2	PB4	LHLS	RHLS	PCAV			
	014	MACH	BETA0	Q(PSF)	PB1	PB2	PB4	LHLS	PHLS	PCAV			
	020-033	MACH	ALPHAO	Q(PSF)	PB1	PB2	PB4	LHVERT	RHVERT	PCAV			
	034-036	MACH	ALPHAW	PSC									
	038 & 039	MACH	BETA	Q(PSF)	PB1	PB2	PB4	LHLS	RHLS	PCAV			
	040-149	ALPHAO	DZ	Q(PSF)	PB1	PB2	PB4	LHLS	PHLS	PCAV			

Note: ID--Independent variable

Table VI
CA20 DATASET DESCRIPTION
(INTERPOLATED/INCREMENTED DATASETS)

DATASET TYPE	DESCRIPTION
MGNXXX	Interpolated data for 747 carrier balance data in carrier reference dimensions.
NGNXXX	Interpolated data for orbiter balance data in orbiter reference dimensions.
UGNXXX	Incremental data - 747 carrier data in presence of orbiter (mated) minus 747 carrier alone data in 747 carrier reference dimensions.
VGNXXX	Incremental data - Orbiter data in presence of 747 carrier (mated) minus orbiter alone data in orbiter reference dimensions.

NOTE: Datasets M, N, U, and V contain the full ΔZ array of 0 3 7.5 15 30 40 and 60 ft. Therefore, the datasets reflect extrapolations for some individual test arrays of ΔZ . For subsequent data plotting, the full ΔZ arrays were truncated to the actual tested arrays.

Table VII. CA20 INTERPOLATED DATASET SUMMARY

(M AND N DATASETS)

DATASET(S)	INTERPOLATED VARIABLES (1) (2)
NGN001 → 011	MACH, ALPHAO
NGN012 → 013	MACH, DZ
NGN014	MACH, BETAO
NGN015 → 033	MACH, ALPHAO
MGN034 → 036	MACH, ALPHAW
MGN037 NGN037	MACH, ALPHAO
MGN038 NGN038 → 039	MACH, BETAC
MGN040 NGN040 → 048	ALPHAO, DZ (SEE NOTE 3)
MGN049 NGN049 → 119 MGN126 NGN126 → 140	ALPHAO, DZ, DX, ALPHAW, DY, BETAO, BETAC, PHI
MGN141 NGN141 → 149	ALPHAO, DZ
MGN120 NGN120 → 125	ALPHAO, DZ, BETAC, ALPHAW

NOTES:

(1) Interpolation procedure:

Number of Values Available for Interpolation	Interpolation Procedure
1	Substitute actual test value with a nominal test value (Note 3 below)
2	Straight line
3	Parabolic spline fit
4 → ∞	Cubic spline fit

(2)

BETA = BETAC

(3)

Interpolation was versus DZ and ALPHAO; however, since each of these datasets (40 → 48) has only one ALPHAO there was therefore no ALPHAO interpolation. The recorded test ALPHAO was replaced with a nominal test ALPHAO (i.e., 8, 12, or 16) so that the only interpolation was versus DZ.

Table VII. Concluded.

(4)

Interpolation on DX was not performed on all datasets due to large data fluxuations from the nominal condition.

Table VIII. CA20 INCREMENTAL DATASET SUMMARY

(INTERFERENCE) - (ISOLATED)

(U AND V DATASETS)

BASE DATASET	VEHICLE	BETAC, deg.	ALPHA _W , deg.	BETA _O , deg.	ELEVON, deg.	AILRON, deg.
MGN034	CARRIER (1)	-5	0	NA	NA	NA
	↓	↓	4	↓	↓	↓
			8			
MGN035		0	0			
		↓	4			
			8			
MGN036		5	0			
	↓	↓	4	↓	↓	↓
			8			
NGN007	ORBITER-0 ₁ S ₁ (2)	NA	NA	-5	.5	0
NGN010	↓	↓	↓	0	5	↓
NGN008					0	
NGN011					10	↓
NGN009					5	-10
NGN018	ORBITER-0 ₂ S ₁ (2)	↓	↓	↓	5	0

NOTES:

- (1) ALPHA_W Sweep (0°, 4°, 8°)
- (2) ALPHA_O Sweep (6°, 8°, 10°, 12°, 14°, 16°, 18°)
- (3) Procedure - (a) Interpolate base datasets to various nominal α and β combinations.
 (b) Subtract appropriate interpolated base dataset from interpolated separation (mated) data, except for datasets 45 thru 48 which were utilized to provide the increment due to attach hardware as follows:

Resulting Dataset Number	First Dataset Number	Second Dataset Number
UGN045	MGN045	MGN049 @ ALPHA _O = 8
VGN045	NGN045	NGN049 @ ALPHA _O = 8
UGN046	MGN046	MGN052 @ ALPHA _O = 12
VGN046	NGN046	NGN052 @ ALPHA _O = 12
UGN047	MGN047	MGN055 @ ALPHA _O = 16
VGN047	NGN047	NGN055 @ ALPHA _O = 16
UGN048	MGN048	MGN046
VGN048	NGN048	NGN046

INCREMENT = (First Dataset) - (Second Dataset)

Datasets 45 thru 48 interpolated per note (3) on "Interpolated Dataset Summary".

Datasets 49, 52, and 55 interpolated versus ALPHA_O, DZ, DX, ALPHA_W, DY, BETA_O, BETAC, PHI.

Table IX. SPECIAL INTERPOLATION FOR CONFIGURATIONS WITH ATTACH HARDWARE

RESULTANT DATASET SGNO — 1		CONFIGURATION	INPUT DATASETS			
CARRIER	ORBITER		$\beta_0 = 0^\circ, \beta_c = 0^\circ$			
			α_0	8°	12°	16°
			α_w	2°	6°	10°
A	B	747/0 0 ₁ S ₁ AT ₃₈ AT ₃₉		40	41	42
E	F	747/1 0 ₁ S ₁ AT ₃₈ AT ₃₉		45	46	47
I	J	747/1 0 ₁ S ₁		49		
K	L	747/1 0 ₁ S ₁			52	
M	N	747/1 0 ₁ S ₁				55
			$\alpha_0 = 12^\circ, \alpha_w = 5.83^\circ$			
			β_0	-5°	0°	
			β_c	-5°	0°	
C	D	747/0 0 ₁ S ₁ AT ₃₈ AT ₃₉		43	41	
G	H	747/1 0 ₁ S ₁ AT ₃₈ AT ₃₉		48	46	

NOTES:

- (1) Orbiter data were interpolated versus α_o and ΔZ
- (2) Carrier data were interpolated versus α_w and ΔZ
- (3) The interpolation assumes a constant incidence angle between Orbiter and Carrier even though they were mounted on separate support systems (see Configuration A, in Figure 2F).
- (4) Resultant datasets SGNO — 1 have both lateral and longitudinal coefficient data.

Table X.

SPECIAL INTERPOLATED INCREMENTS FOR CONFIGURATIONS WITH ATTACH HARDWARE

RESULTANT DATASET		INPUT DATASETS			
		$\beta_0 = 0^\circ$		$\beta_C = 0^\circ$	
		α_0	8°	12°	16°
		α_W	2°	6°	10°
CARRIER	ORBITER				
WGNR45	XGNB45		45- 49		
WGNR46	XGNB46			46-52	
WGNR47	XGNB47				47-55
		$\alpha_0 = 12^\circ, \alpha_W = 5.83^\circ$			
WGNR48	XGNB48	48-46			
WGNR43	XGNB43	43-41			
WGNRDB	XGNBDB	(48, 46) - (43, 41)			
		$\beta_0 = 0^\circ, \beta_C = 0^\circ$			
WGNRCA	XGNBCA	(45, 46, 47) - (40, 41, 42)			

NOTE: Resultant datasets have incremental lateral and longitudinal coefficient data.

Table XI. CARRIER SUPPORT STRUT TARE AND INTERFERENCE CORRECTION PROCEDURE

α , deg.	β , deg.	CA5 Run with Image Strut	CA5 Run without Image Strut
$\triangle 1A$	0	15	99
2	$\triangle 2$	20	104
6	$\triangle 2$	23	108
8	$\triangle 2$	27	112

$\alpha_w = \triangle 1A = 3^\circ \rightarrow 16^\circ, 1^\circ \text{ increments}$

$\beta = \triangle 2 = -12^\circ, -10^\circ, -8^\circ, -6^\circ, -4^\circ, -3^\circ, -2^\circ, -1^\circ, 0^\circ, 1^\circ, 2^\circ, 3^\circ, 4^\circ, 6^\circ, 8^\circ, 10^\circ, 12^\circ$

$$\text{Correction} = \left(\begin{array}{c} \text{Run with} \\ \text{Image Strut} \end{array} \right) - \left(\begin{array}{c} \text{Run without} \\ \text{Image Strut} \end{array} \right)$$

"Correction" datasets are 6GMDA4, 6GMDB4 and 6GMDC4, which were interpolated for $\alpha_w = 2^\circ$ to 12° and $\beta = -5^\circ, 0^\circ, +5^\circ$, respectively.

$$\text{Corrected} = \left(\text{CA20 Data} \right) - \left(\text{Correction} \right)$$

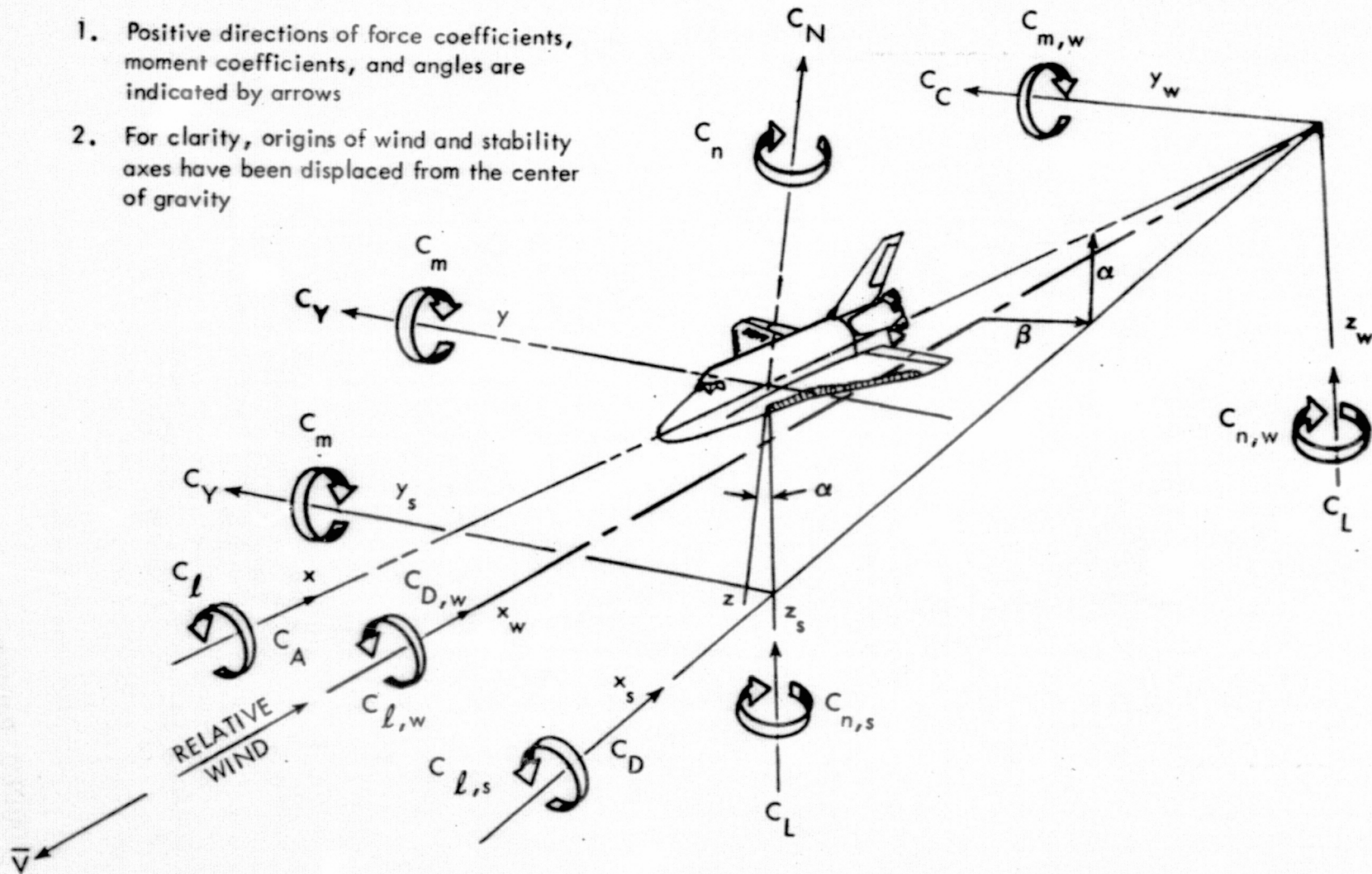
"Corrected" datasets are 5GN034-149. For the DZ and α_0 sweeps (2nd independent variable), the "correction" is a constant value for all coefficients. For the α_w and β sweeps (2nd independent variable), the "correction" is a function of α_w and β , respectively.

Note:

"Correction: and "corrected" data are shown in the Appendix.

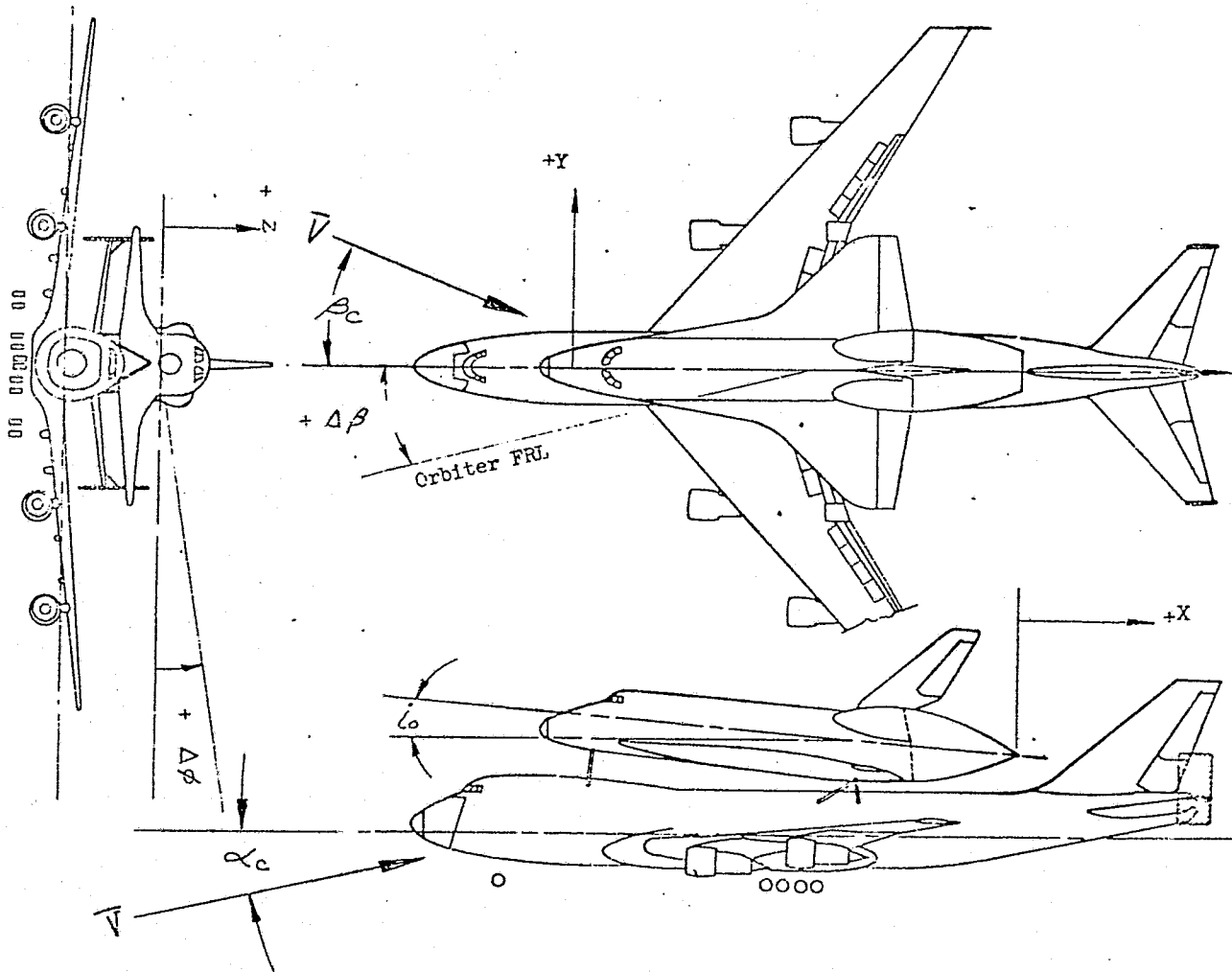
Notes:

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity



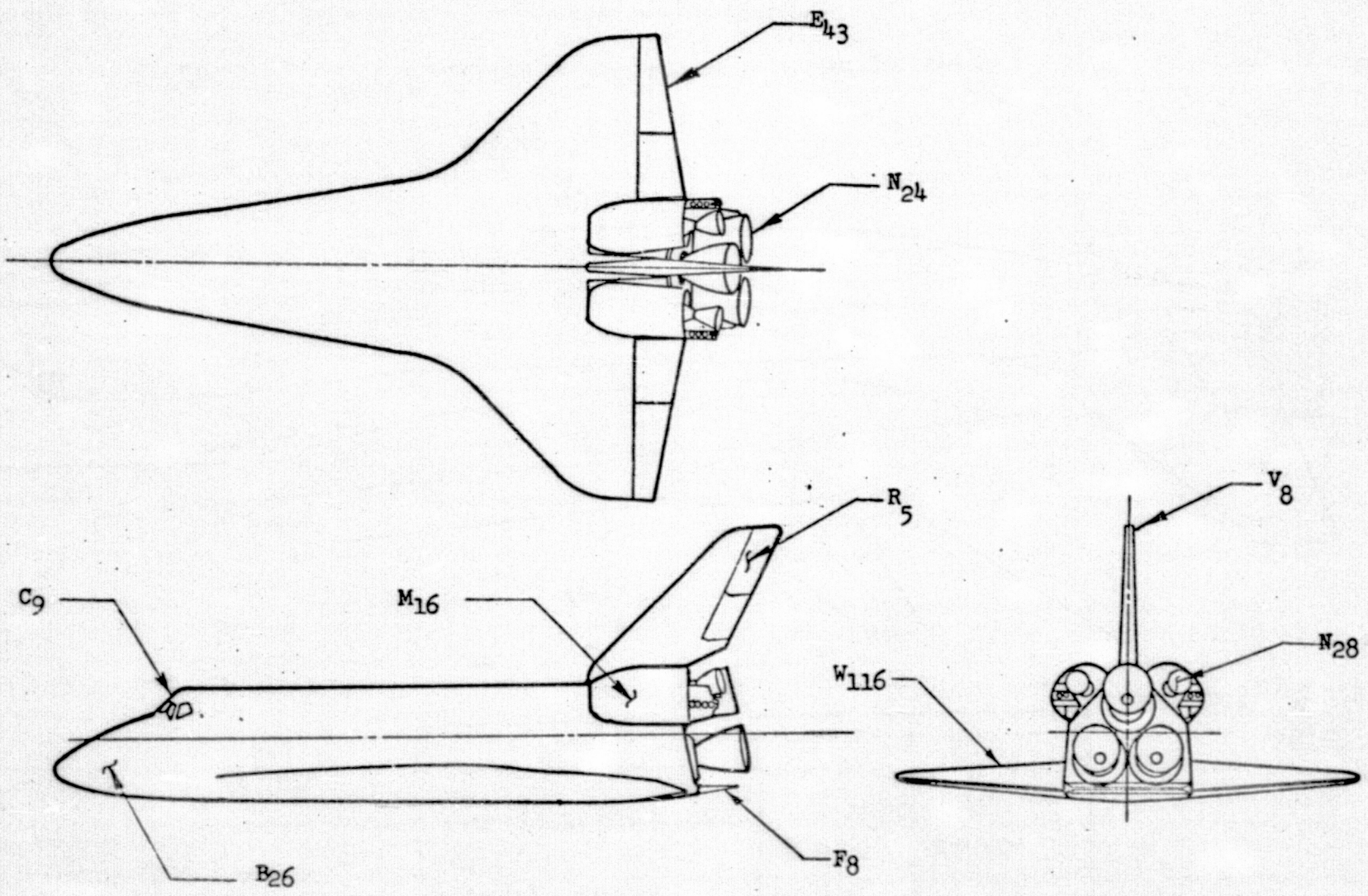
a. General

Figure 1. - Axis systems.



b. Orbiter/747 Axis System Definition

Figure 1. - Concluded.

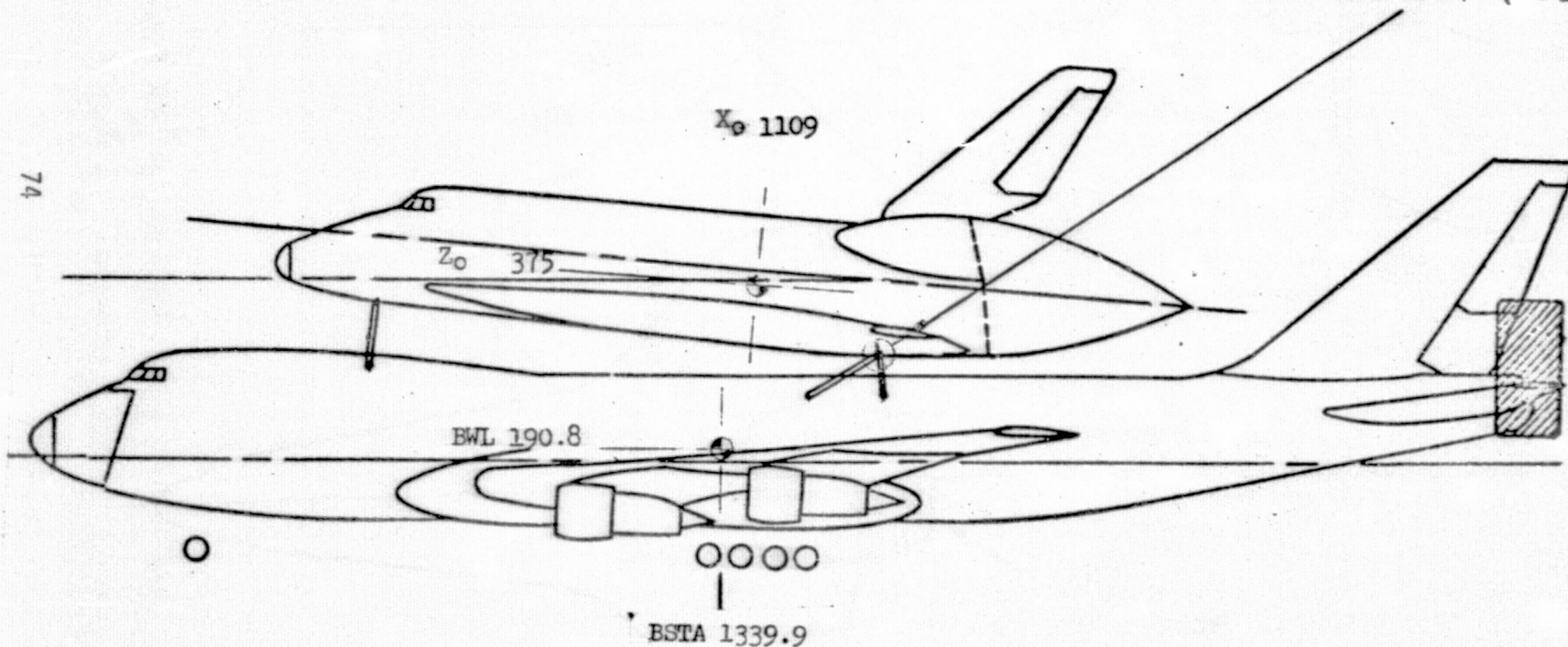


a. SSV Orbiter Configuration (VC70-000002)
Figure 2. - Model sketches

REFERENCE DIMENSIONS (FS)

	ORBITER	747 CARRIER
WING AREA $\sim \text{Ft}^2$	2690	5500
MAC (\bar{c}) \sim INCHES	474.81	327.78
SPAN (b) \sim INCHES	936.68	2348.04
MOMENT REFERENCE CENTER	67.5% LB	25.0 % \bar{c}
F.S. \sim INCHES	1109.0	1339.9
W.P. \sim INCHES	375.0	190.8

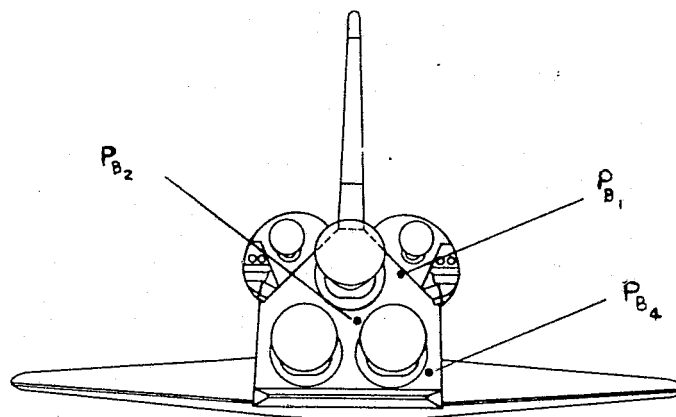
BWL 400 (\bar{x}_0 96.51)
 BSTA 1607 (\bar{z}_0 267.5)
 (\bar{x}_0 1317)



b. Orbiter/747 Flight Test Configurations

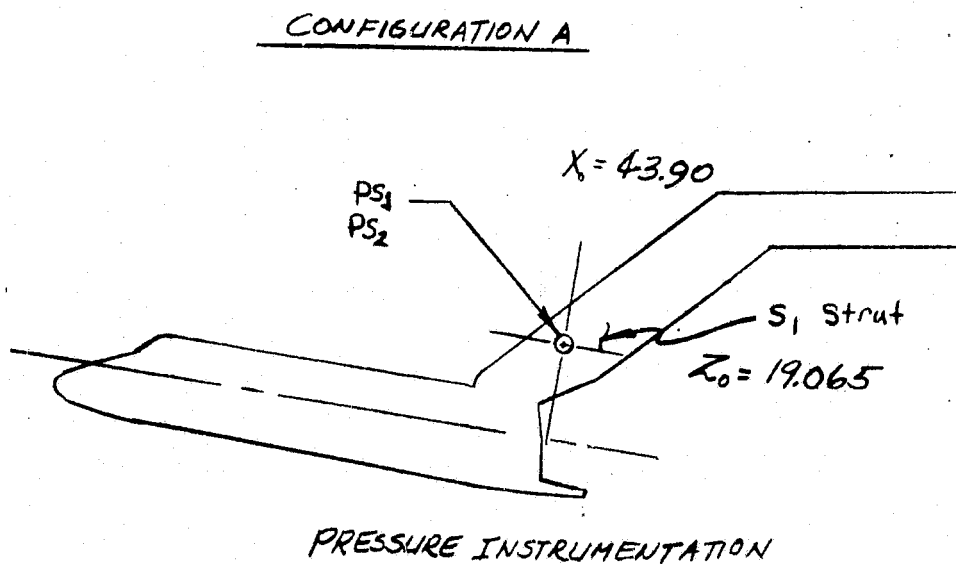
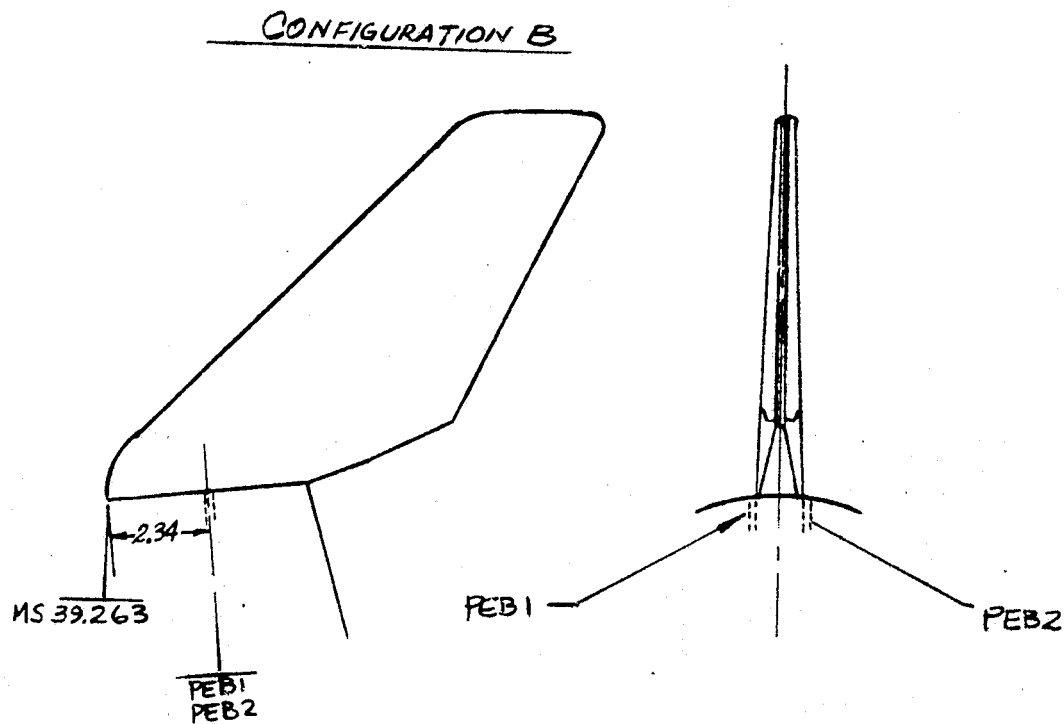
Figure 2. - Continued.

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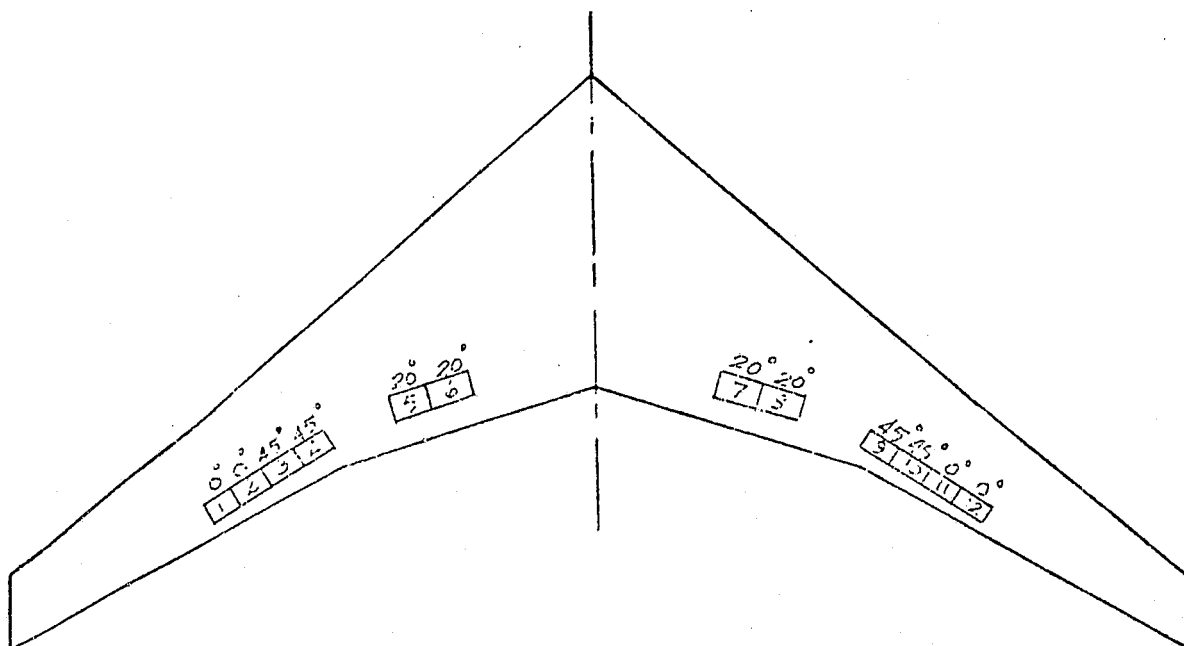
c. Base Pressure Locations

Figure 2. - Continued.



d. Blade Strut and Vertical Tail Pressure Locations

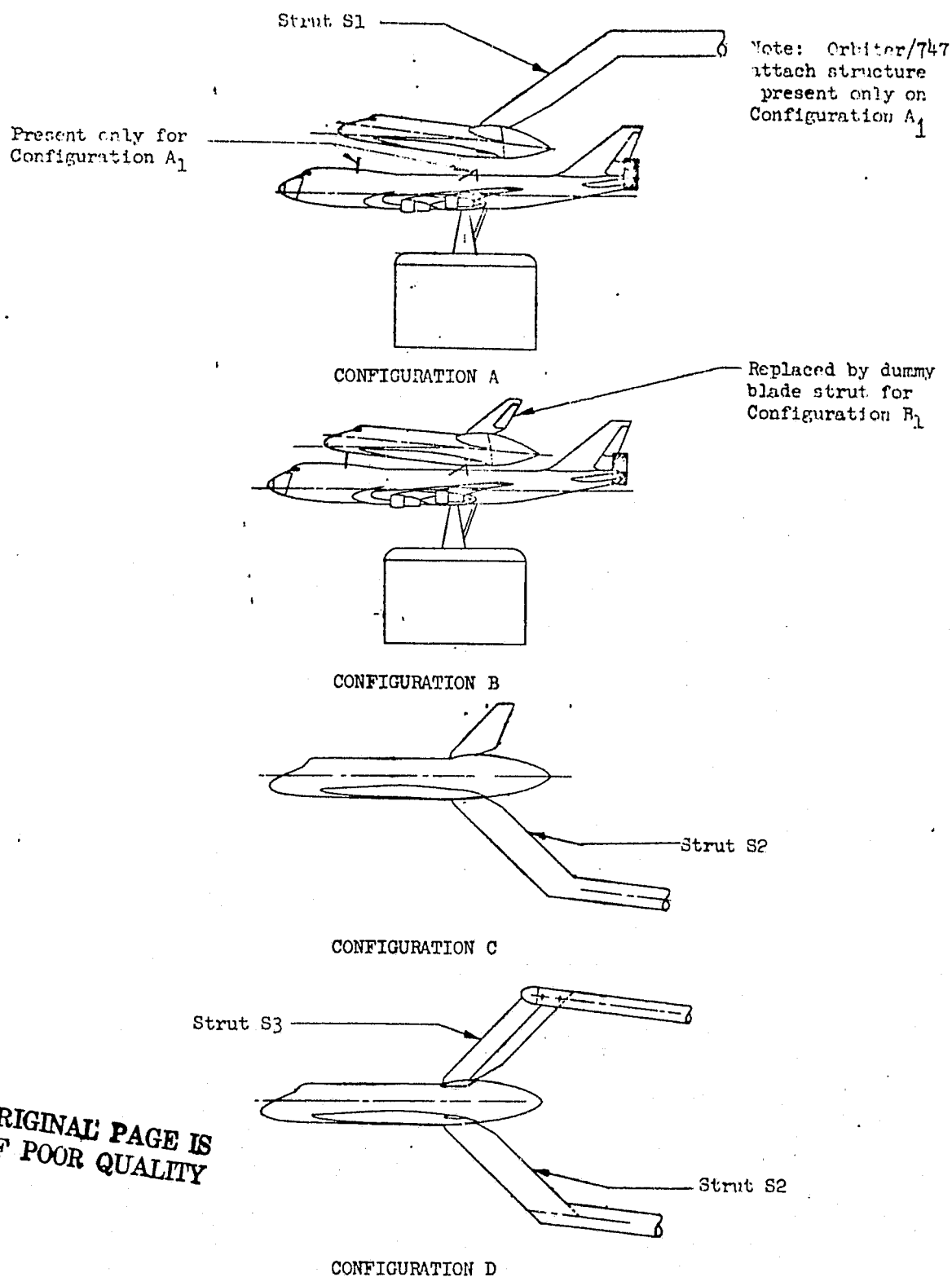
Figure 2. - Continued.



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e. Standard In-Flight Speed-Brake

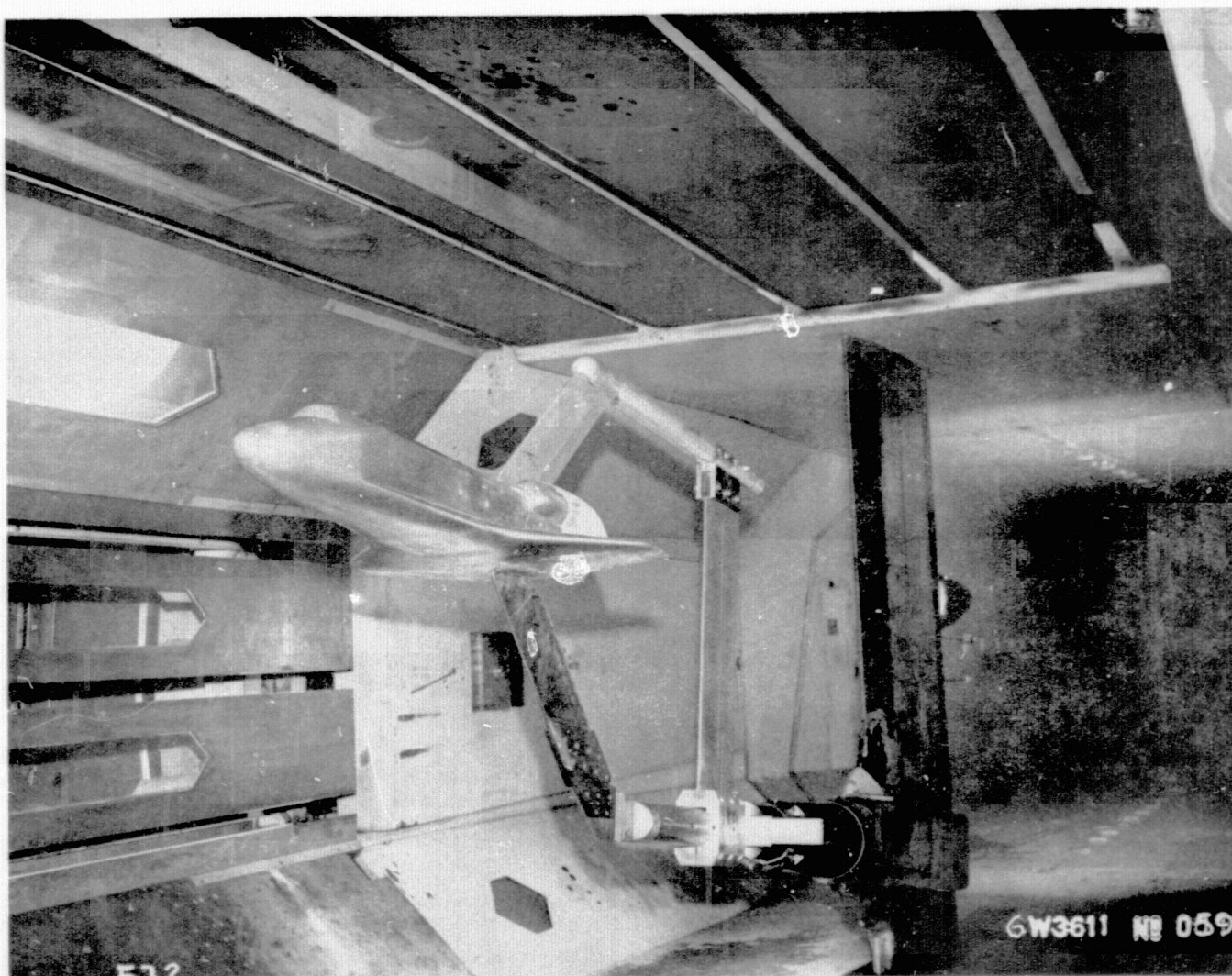
Figure 2. - Continued.



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f. Test Support Configurations

Figure 2. - Continued.

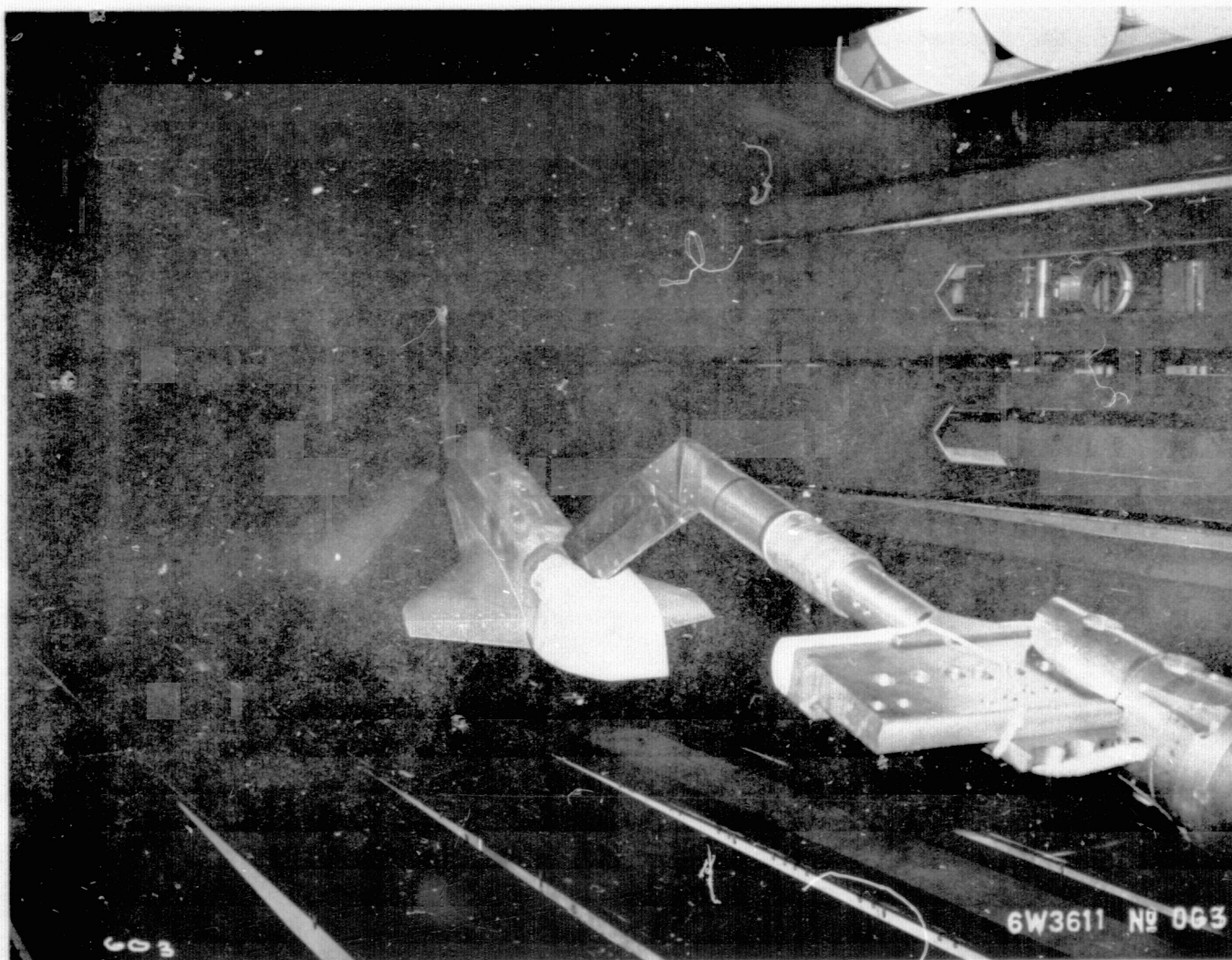


a. Orbiter Alone with Dummy Blade in Proximity for Sting Tare Effect Study

Figure 3. - Model photographs.

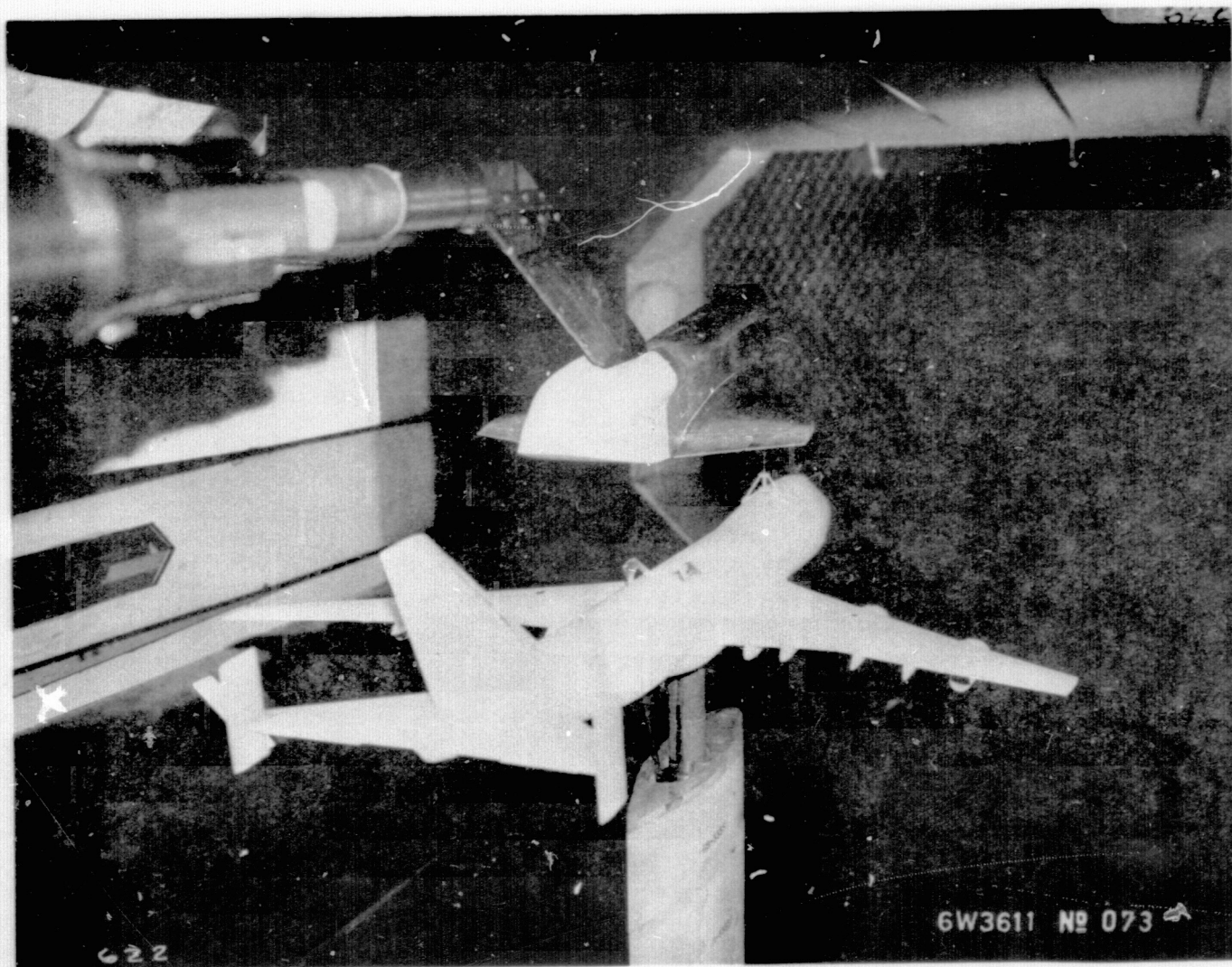
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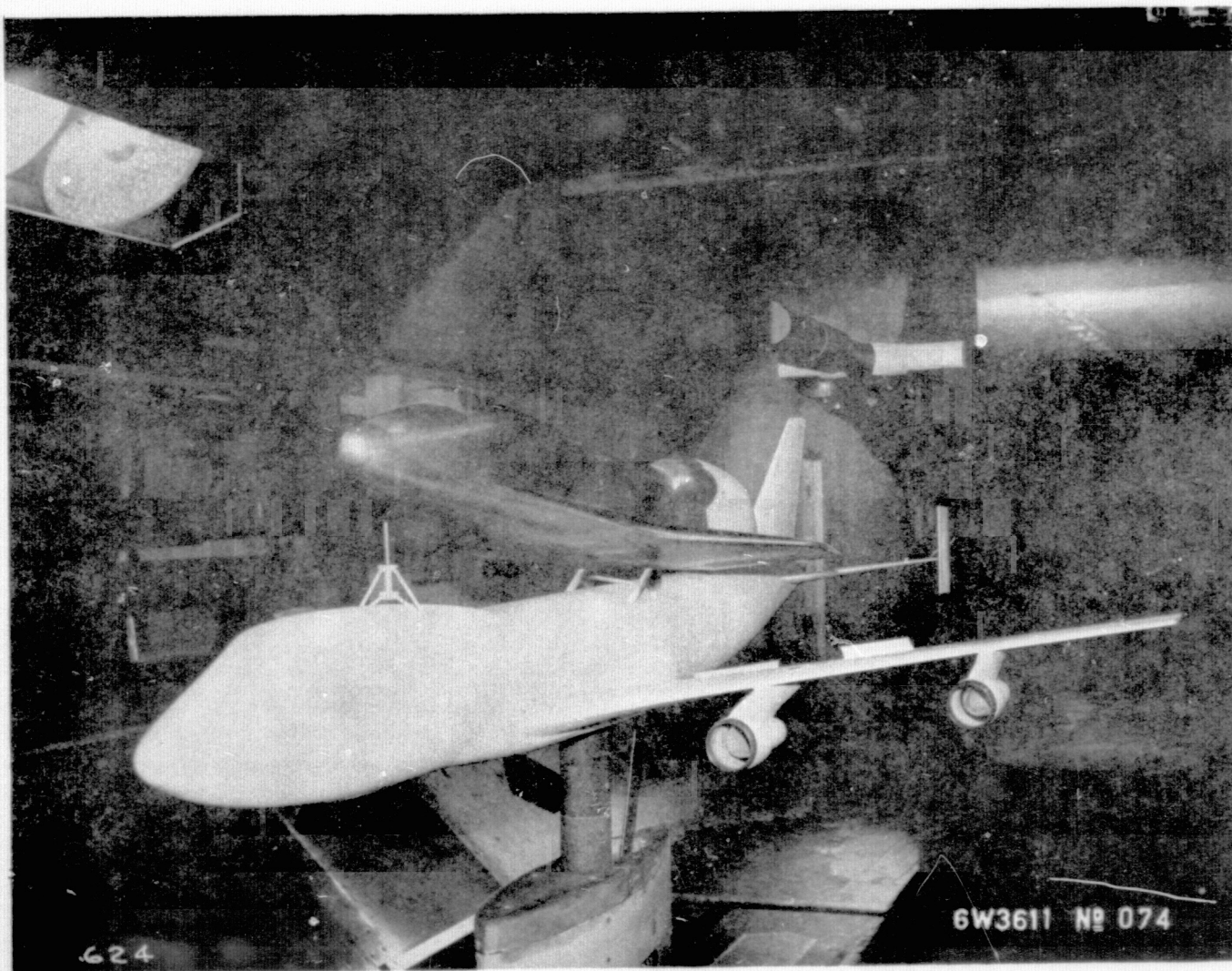
b. Orbiter Alone with Tail Cone TC_{5.1}

Figure 3. - Continued.



c. Aft View of the Orbiter/747 Showing Vertical Displacement

Figure 3. - Continued.



d. Front View of the Orbiter at an Angle of Attack with Respect to the 747 Carrier

Figure 3. - Concluded.

DATA FIGURES

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VOLUME 2 Figures 26-39 Pages 832-1863

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(NGN003) DATA NOT AVAILABLE
(NGN010) CA20 01 S1

ORBITER DATA

ELEVON 5.000 5.000
AILRON .000 .000
BETA0 .000 .000

REFERENCE INFORMATION

SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

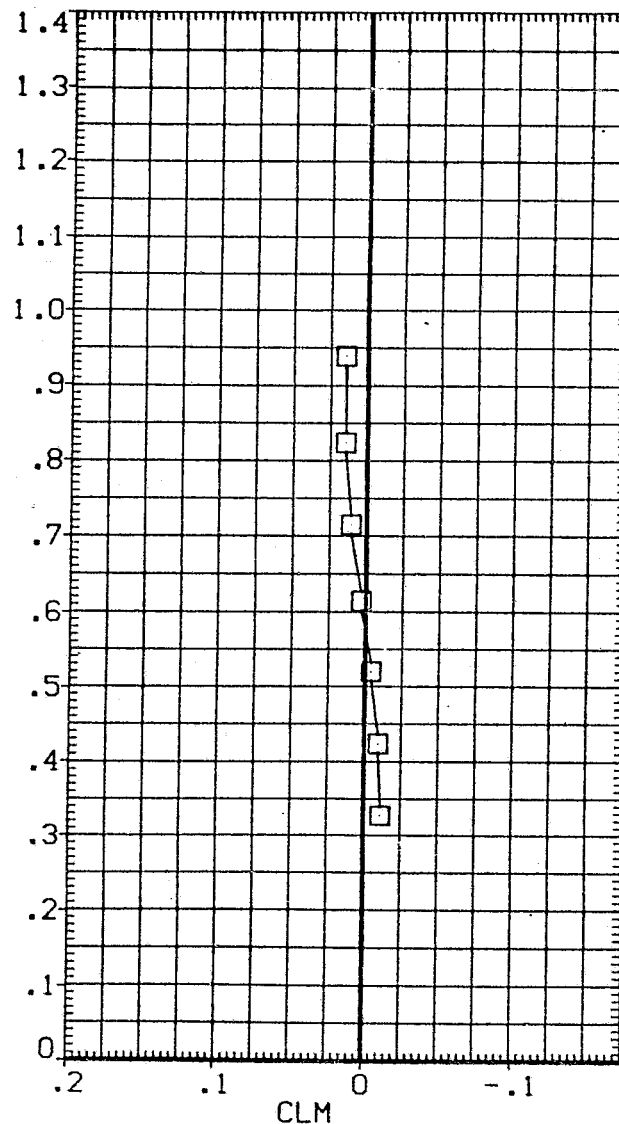
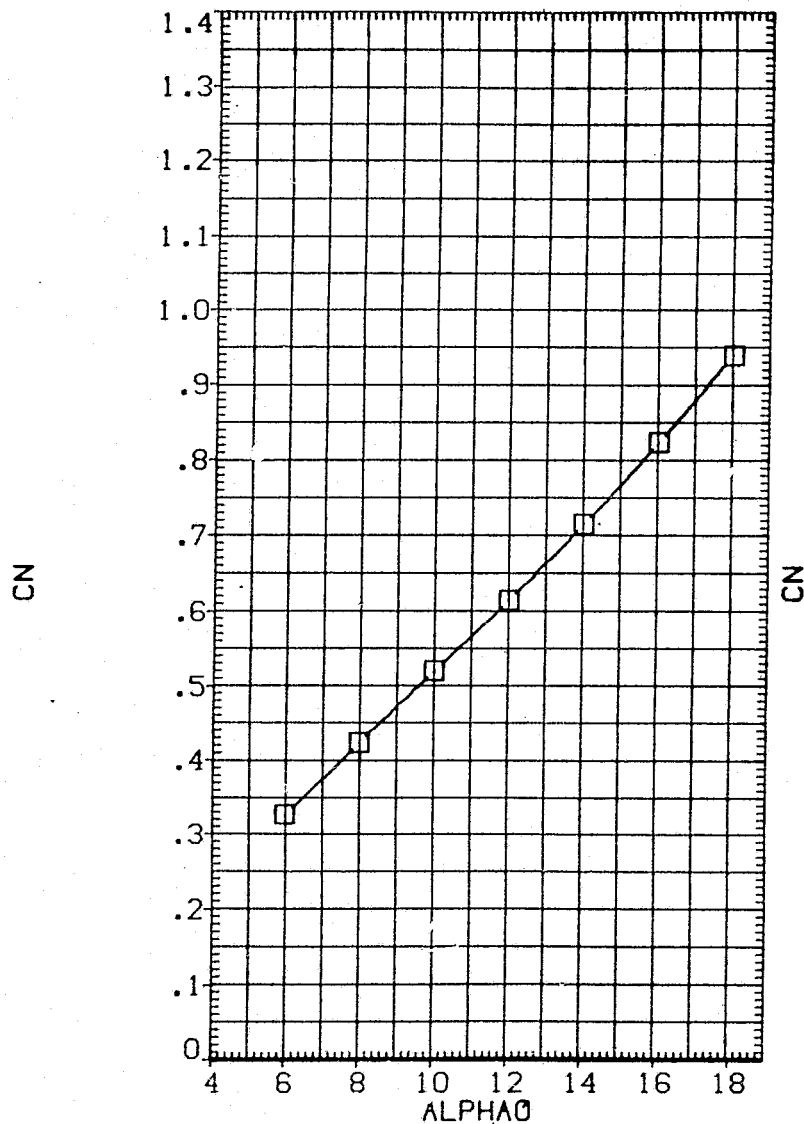


FIG 4 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 01

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN003) CA20 01 S2 S3
 (NGN010) CA20 01 S1

ORBITER DATA
 ORBITER DATA

ELEVON 5.000
 AILRON .000
 BETA0 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6900 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

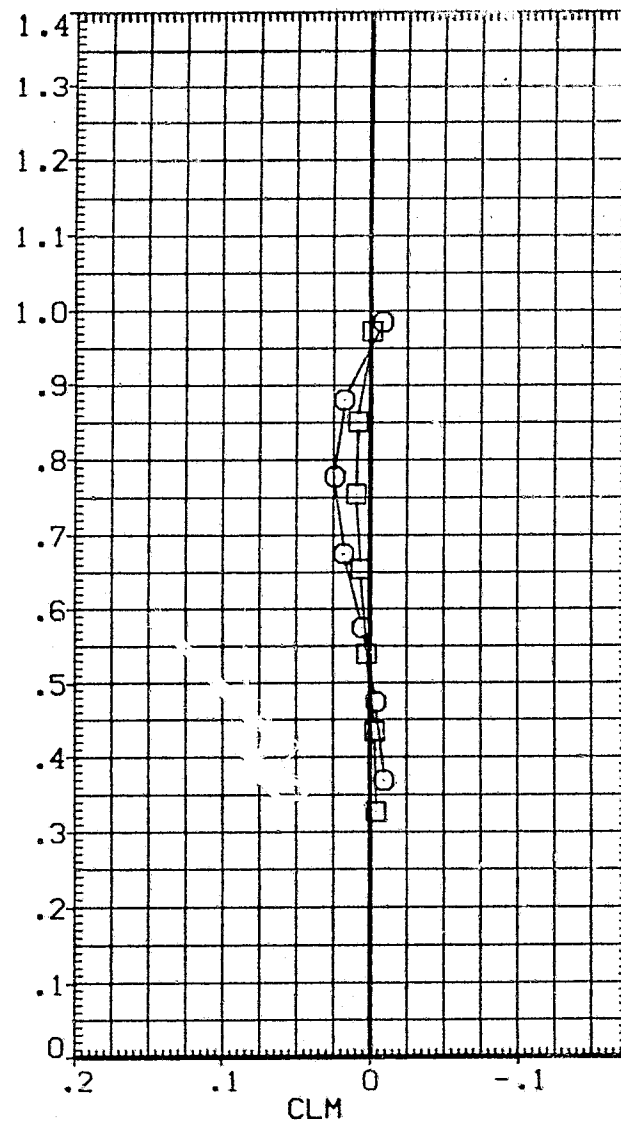
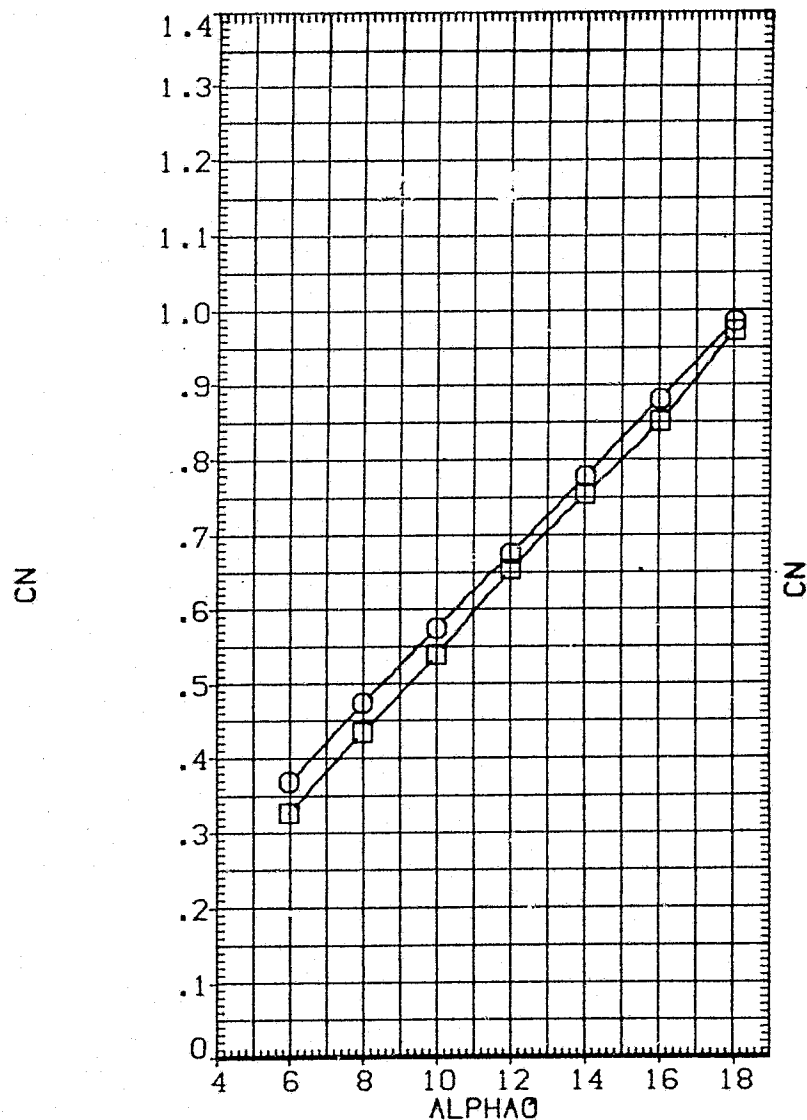


FIG 4 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 01

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN003) □ DATA NOT AVAILABLE
 (NGN010) □ CA20 01 S1

ORBITER DATA

ELEVON	AIRON	BETA0
5.000	.000	.000
5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

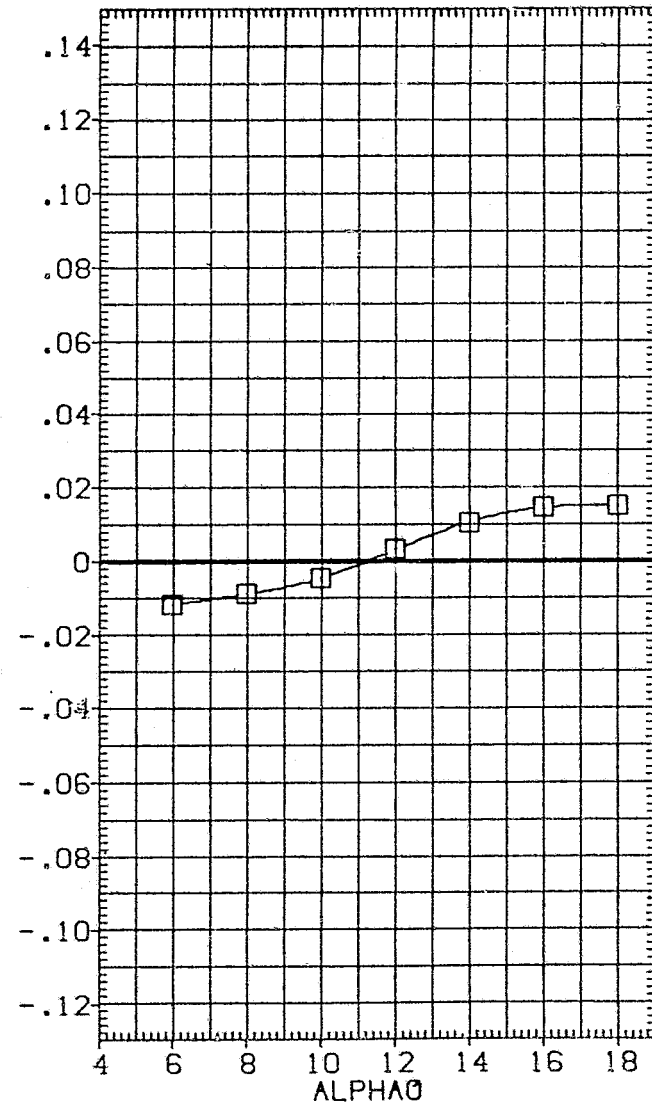
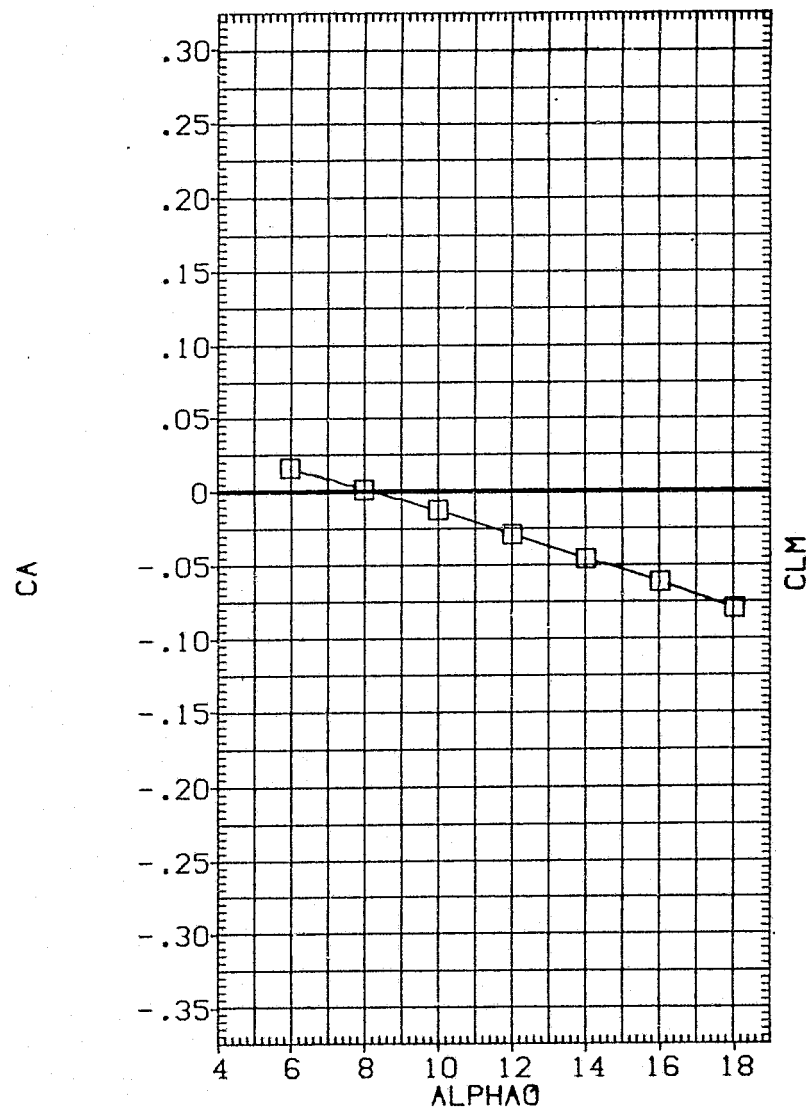


FIG 4 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 01

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN003) CA20 01 S2 S3
 (NGN010) CA20 01 S1

ORBITER DATA
 ORBITER DATA

ELEVON 5.000
 AILRON .000
 BETA0 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.5800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

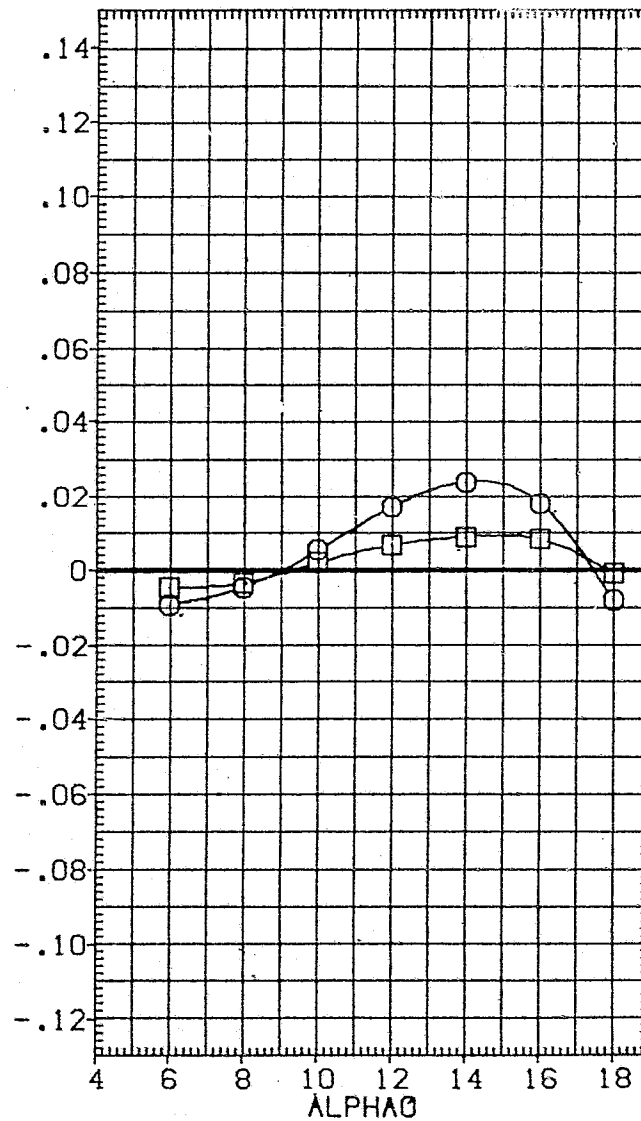
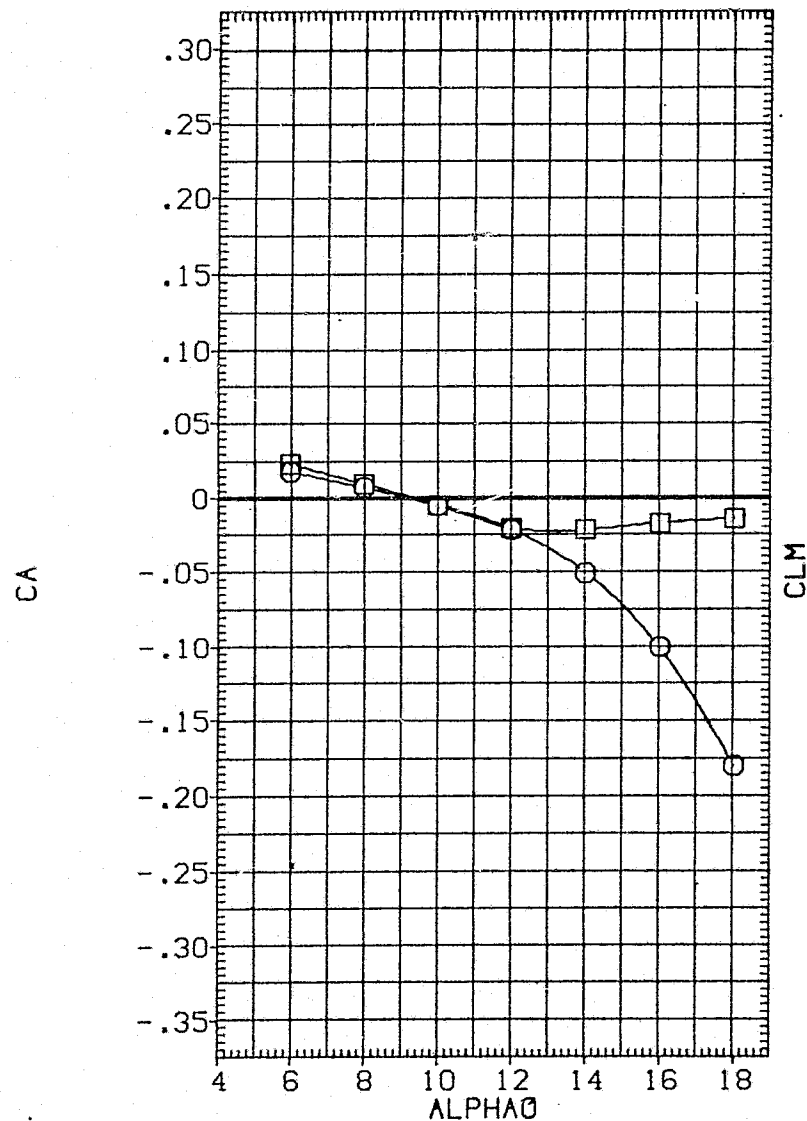


FIG 4 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 01
 (B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN003) ○ DATA NOT AVAILABLE
 (NGN010) □ CA20 01 S1

ORBITER DATA

ELEVON	AILRON	BETA0
5.000	.000	.000
5.000	.000	.000

REFERENCE INFORMATION

		SQ.FT.
SREF	2690.0000	
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

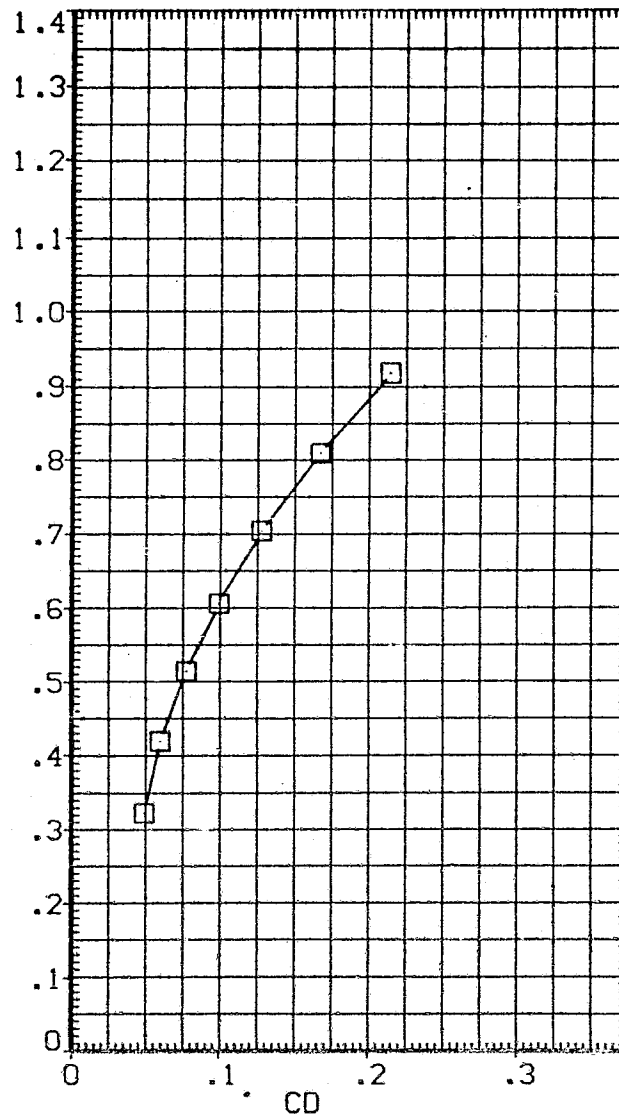
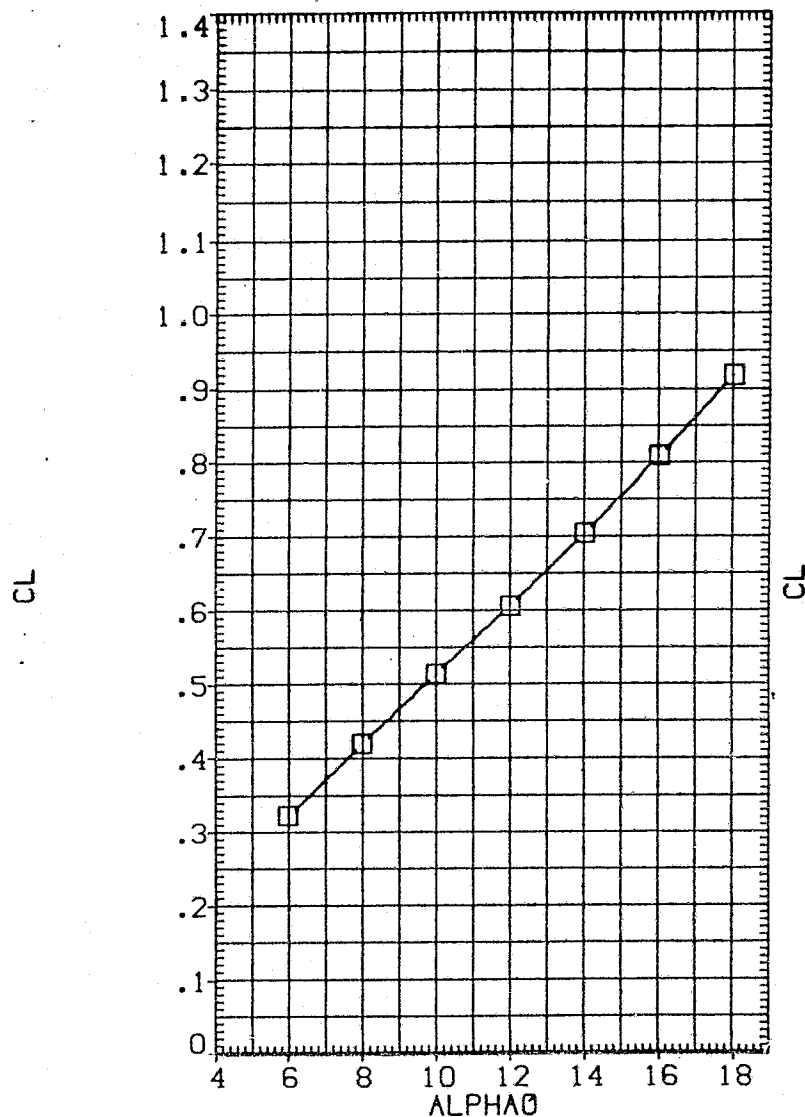


FIG 4 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 01

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN003) CA20 01 S2 S3
 (NGN010) CA20 01 S1

ORBITER DATA
 ORBITER DATA

ELEVON 5.000
 AILRON .000
 BETA0 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

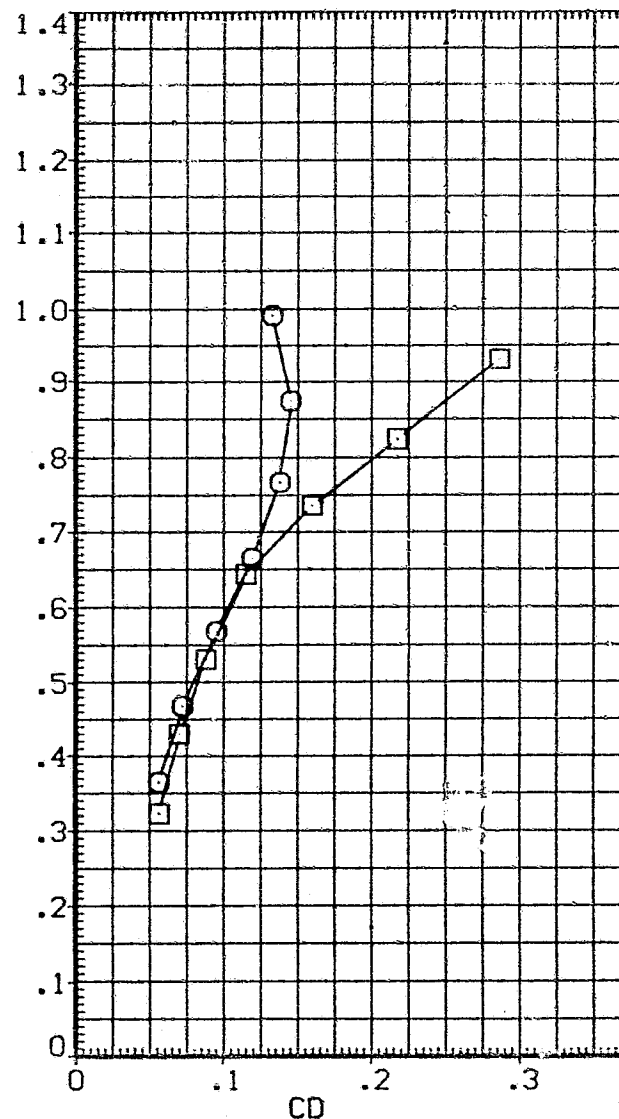
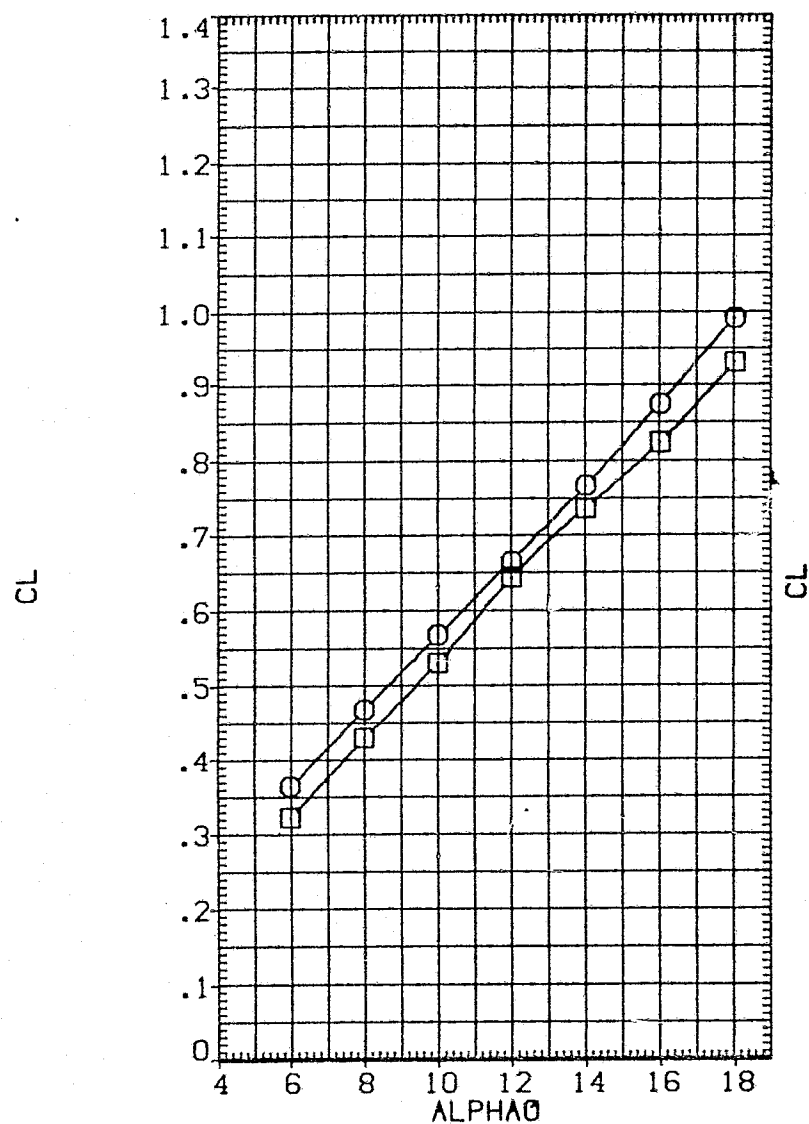


FIG 4 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 01
 (B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN003) ○ DATA NOT AVAILABLE
 (NGN010) □ CA20 01 S1

ORBITER DATA

ELEVON	AILRON	BETAO
5.000	.000	.000
5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

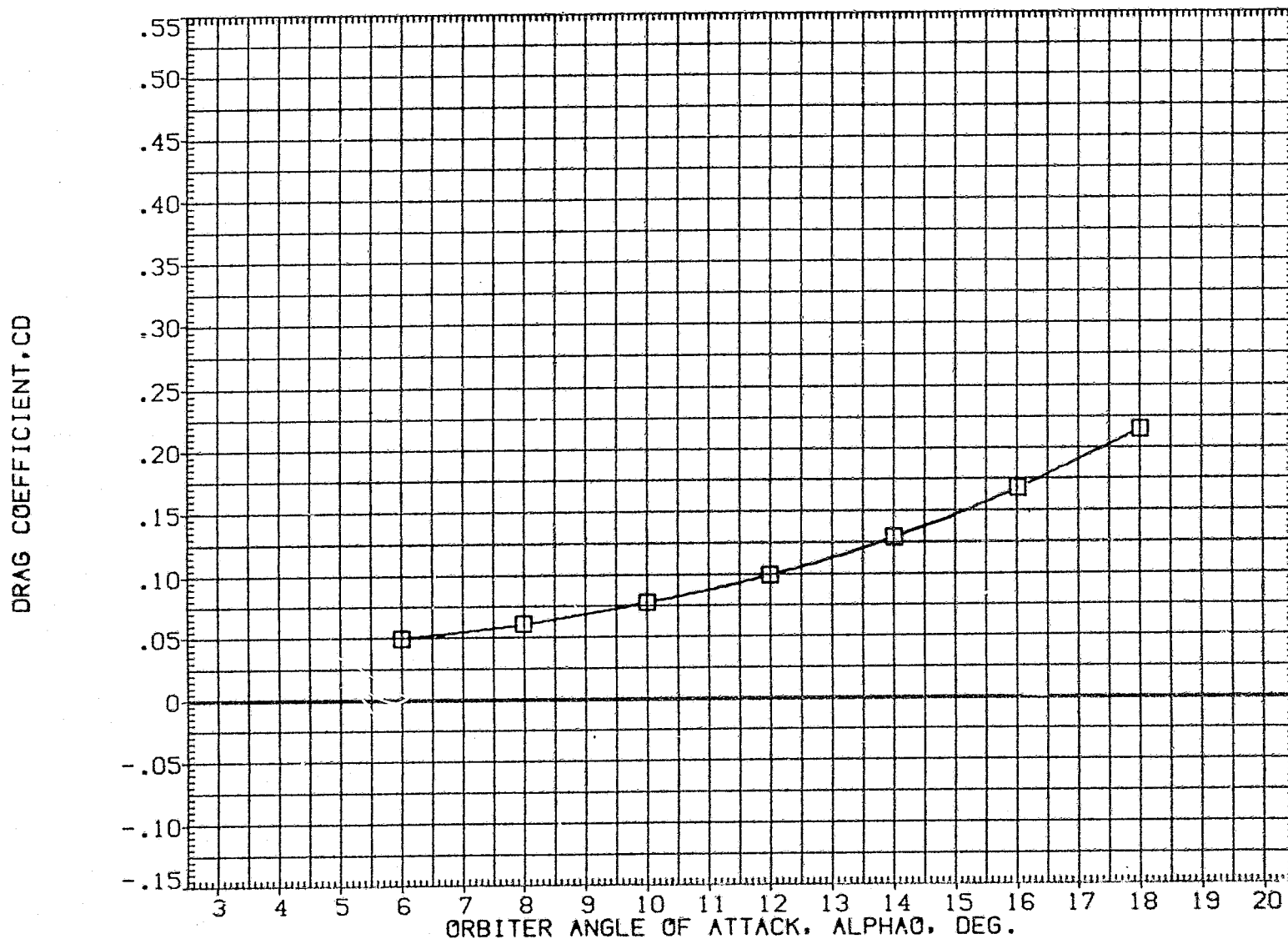


FIG 4 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 01
 (A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(NGN003) \square CA20 01 S2 S3
(NGN010) \square CA20 01 S1

ORBITER DATA
ORBITER DATA

ELEVON 5.000
AILRON .000
BETAO .000

REFERENCE INFORMATION

SREF 2690.0000 SQ.FT.
LREF 474.9100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

DRAG COEFFICIENT, CD

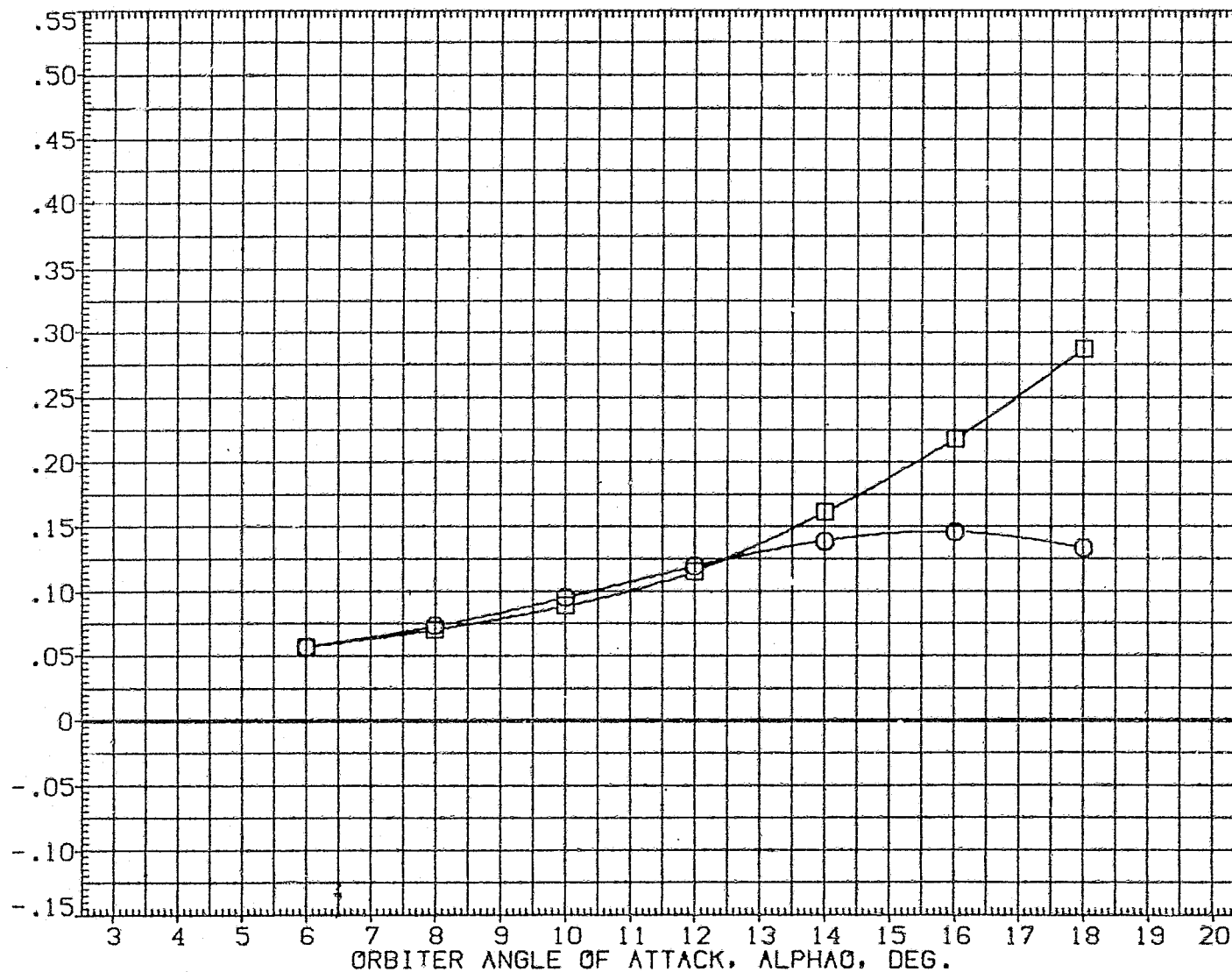


FIG 4 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 01

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN003) DATA NOT AVAILABLE
 (NGN010) CA20 01 S1

ORBITER DATA ELEVON AILRON BETA0
 5.000 .000 .000
 5.000 .000 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

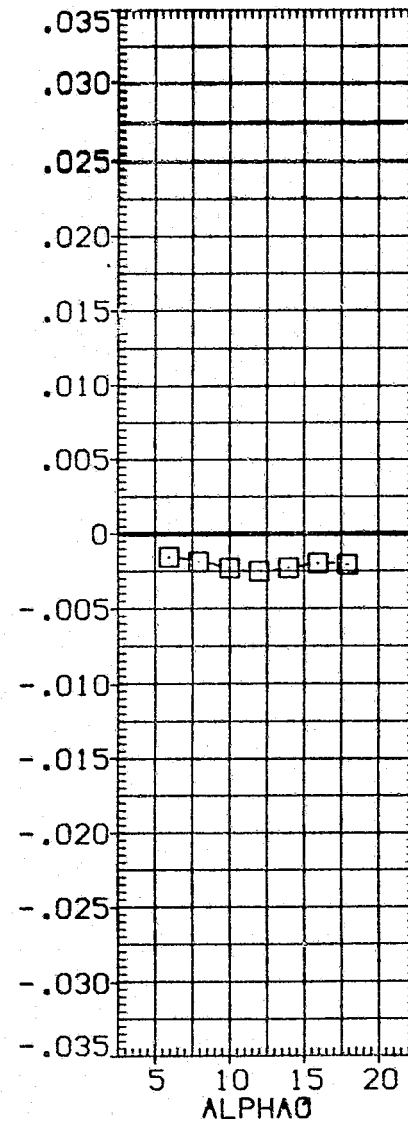
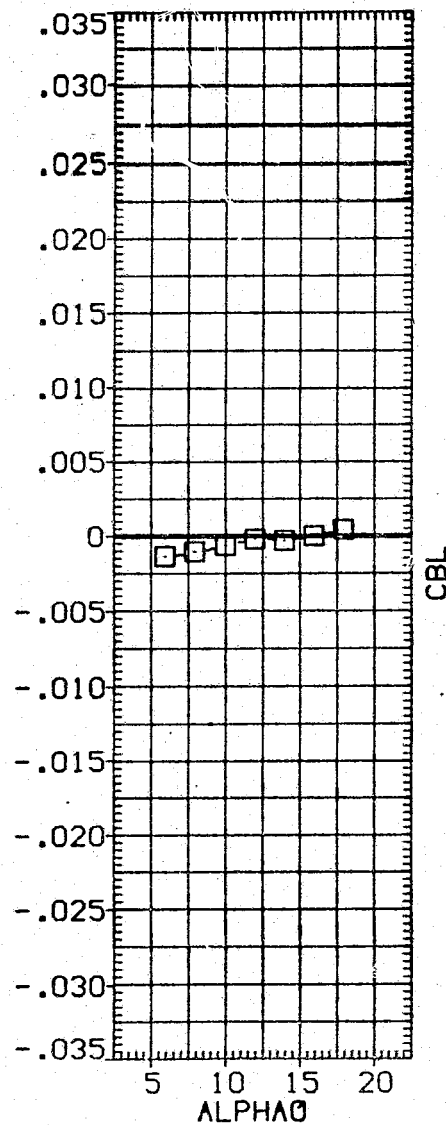
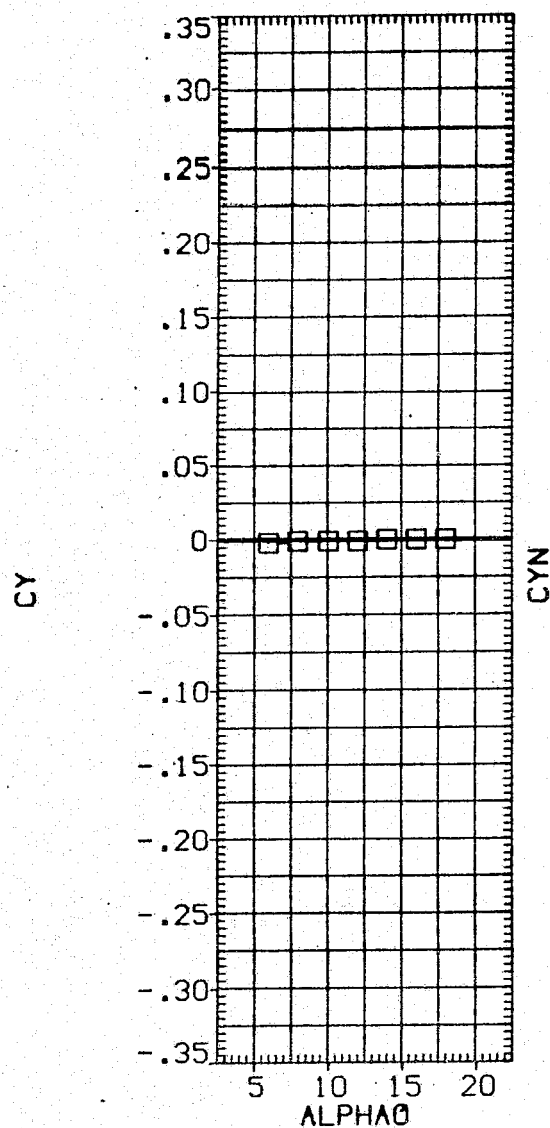


FIG 4 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 01

CAVMACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN003)	CA20 01 S2 S3
(NGN010)	CA20 01 S1

	ELEVON	AILRON	BETA0
ORBITER DATA	5.000	.000	.000
ORBITER DATA	5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	50. FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

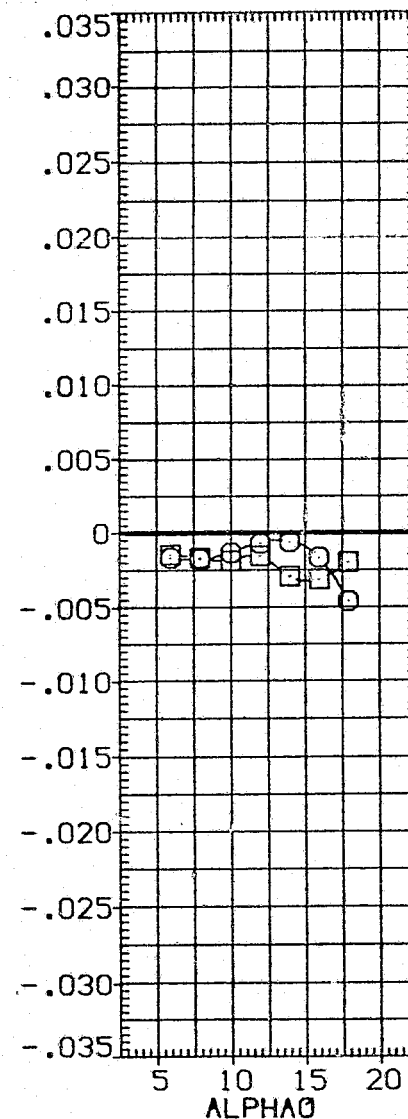
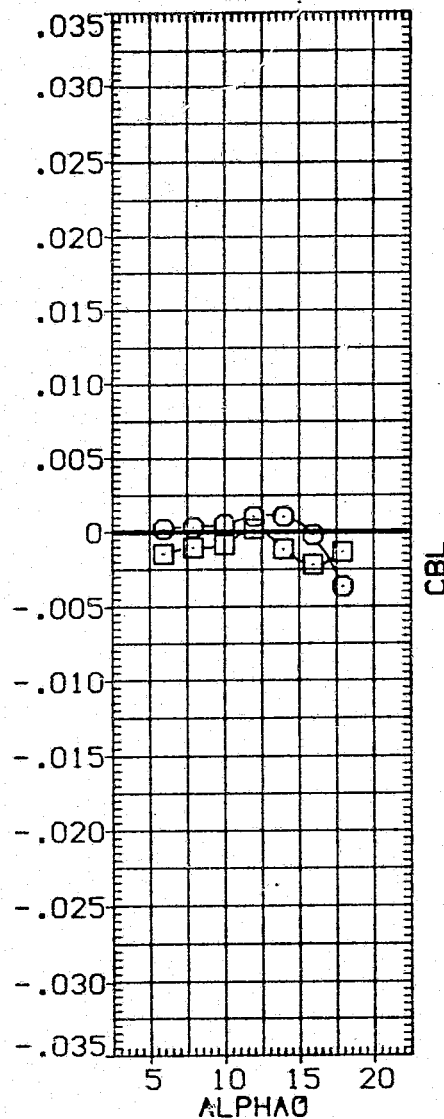
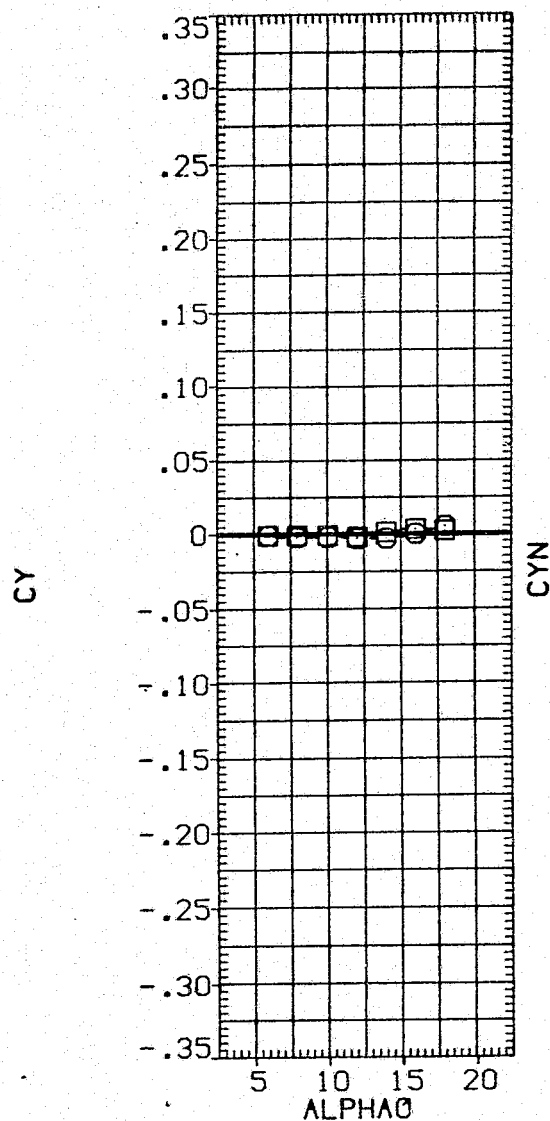


FIG 4 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 01
(B) MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGND06) CA20 02 S2 S3
 (NGND18) DATA NOT AVAILABLE

ORBITER DATA

ELEVON	AILRON	BETA0
5.000	.000	.000
5.000	.000	.000

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XMRF	1109.0000 IN.X0
YMRF	.0000 IN.Y0
ZMRF	375.0000 IN.Z0
SCALE	.0300

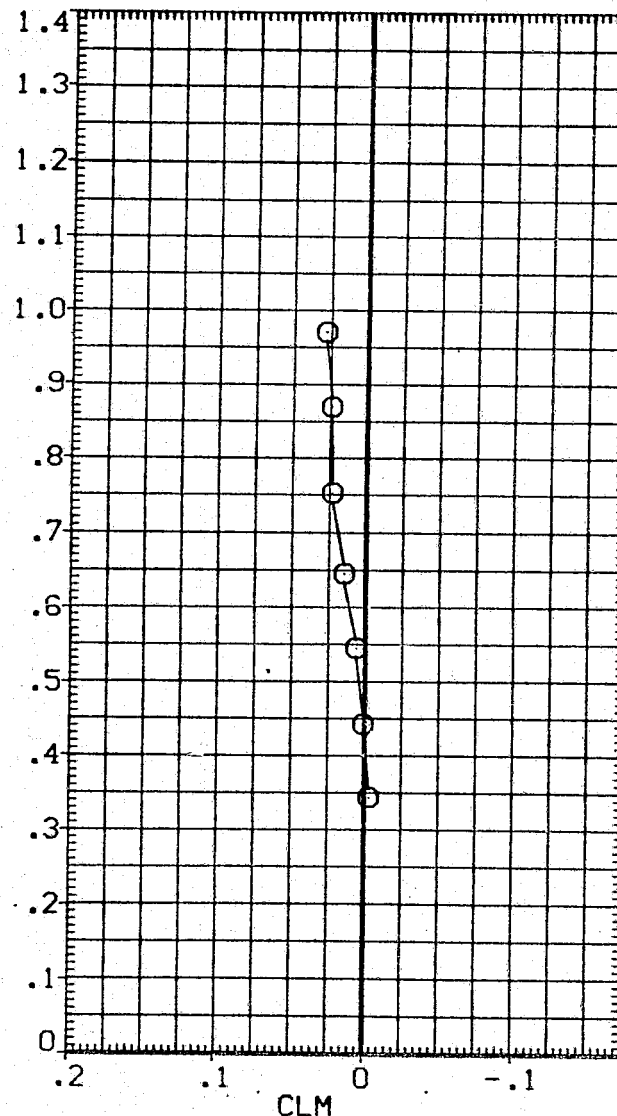
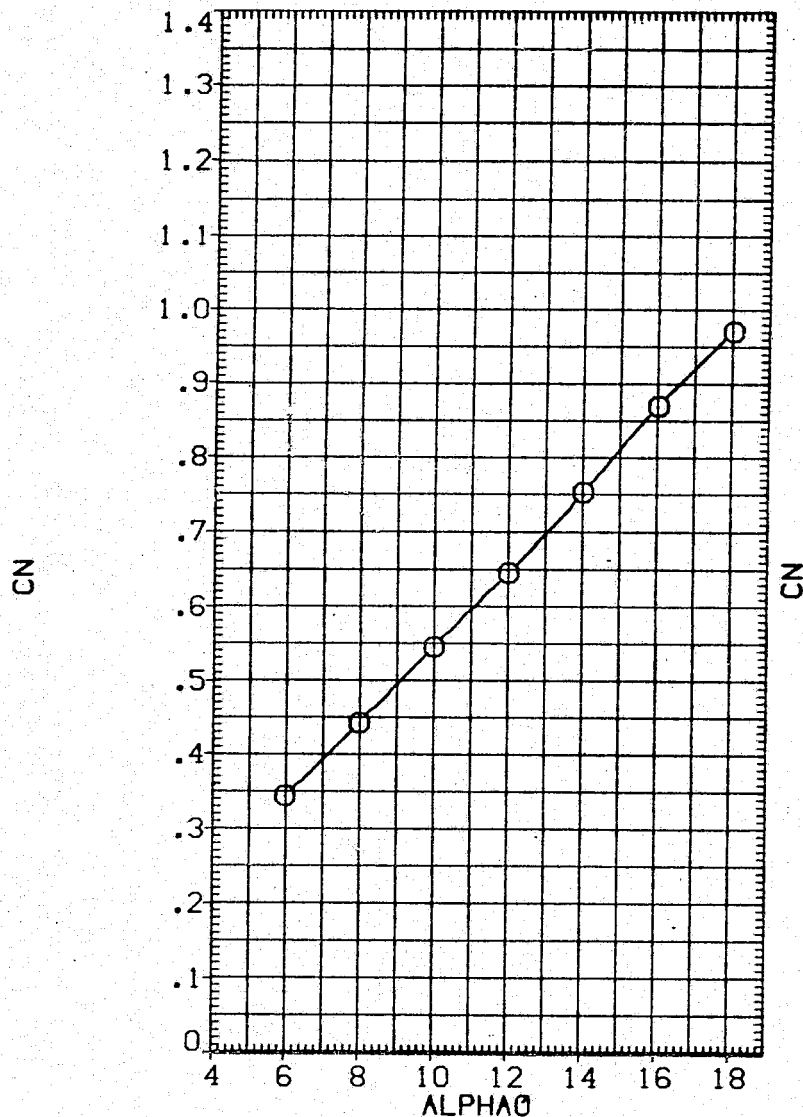


FIG 5 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 02
 (A)MACH = .48

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN006) CA20 02 S2 S3
 (NGN018) CA20 02 S1

ORBITER DATA
 ORBITER DATA

ELEVON AILRON BETA0
 5.000 .000 .000
 5.000 .000 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

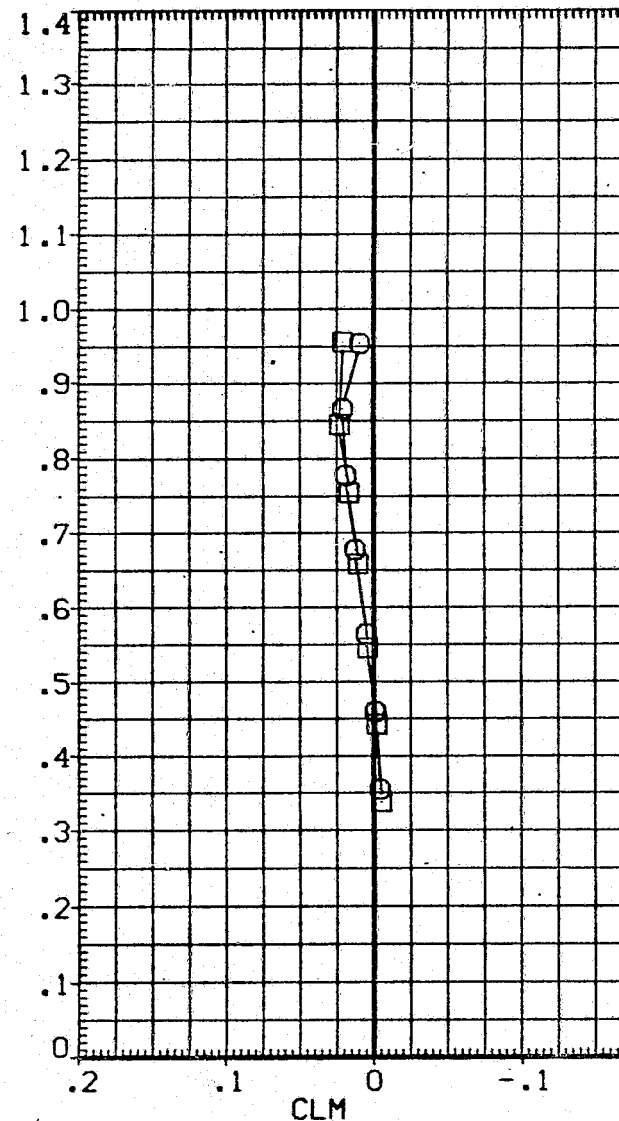
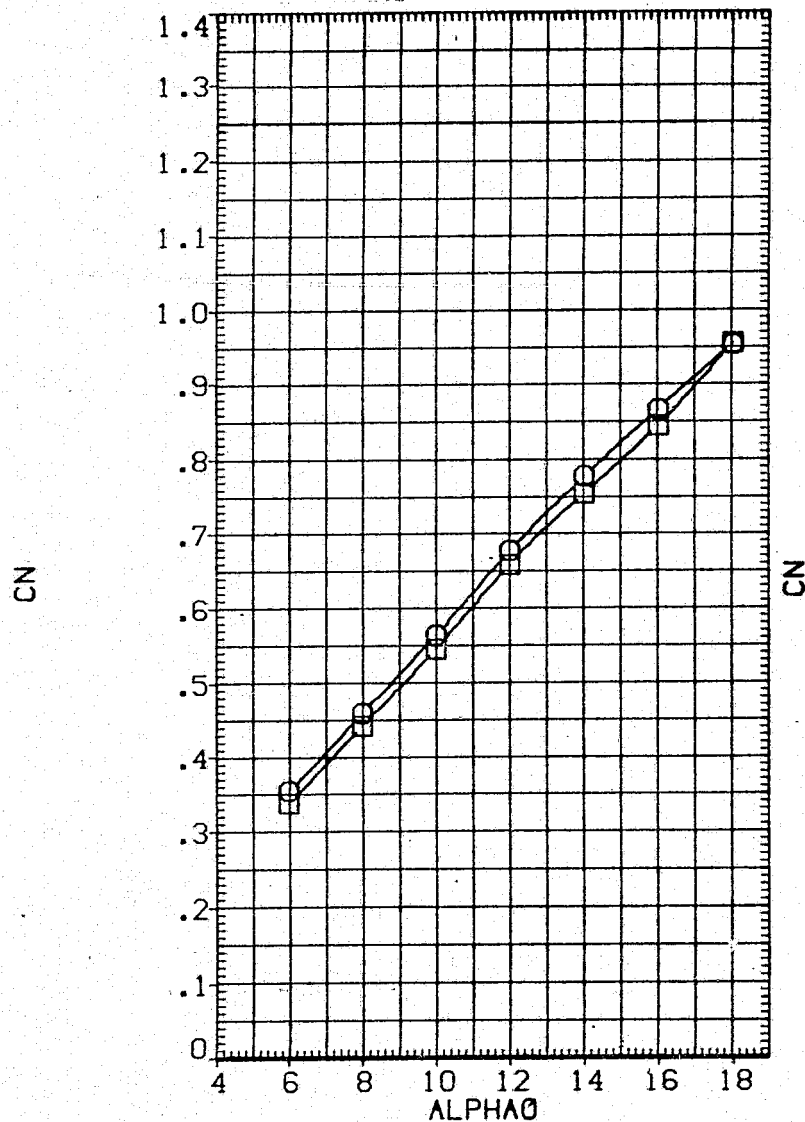


FIG 5 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 02

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN006) CA20 02 S2 S3
 (NGN018) DATA NOT AVAILABLE

ORBITER DATA

ELEVON	AILRON	BETA0
5.000	.000	.000
5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

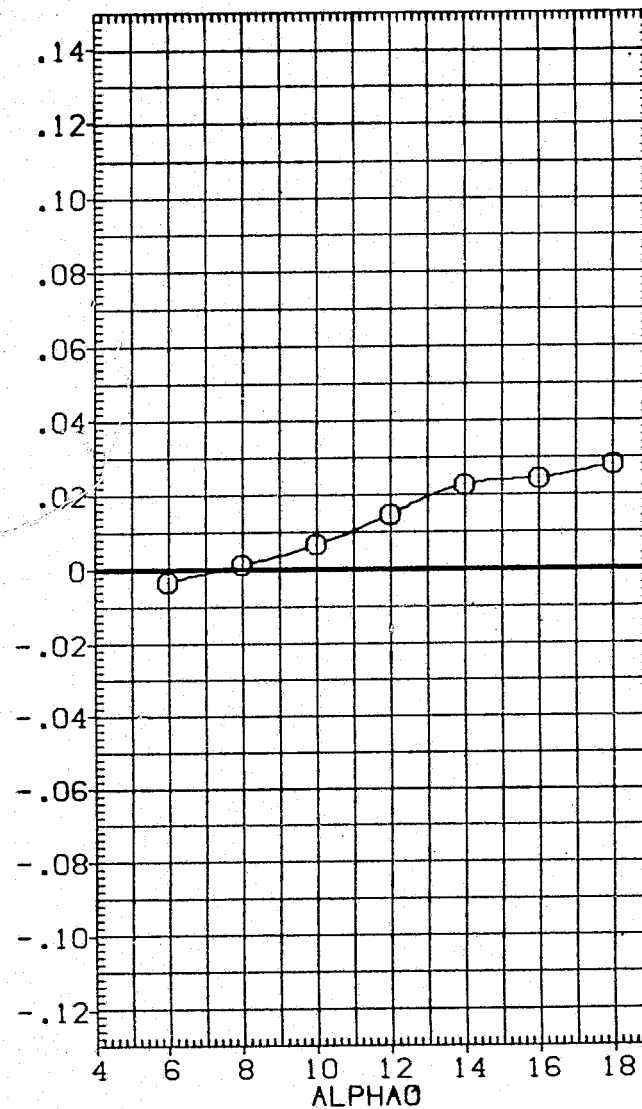
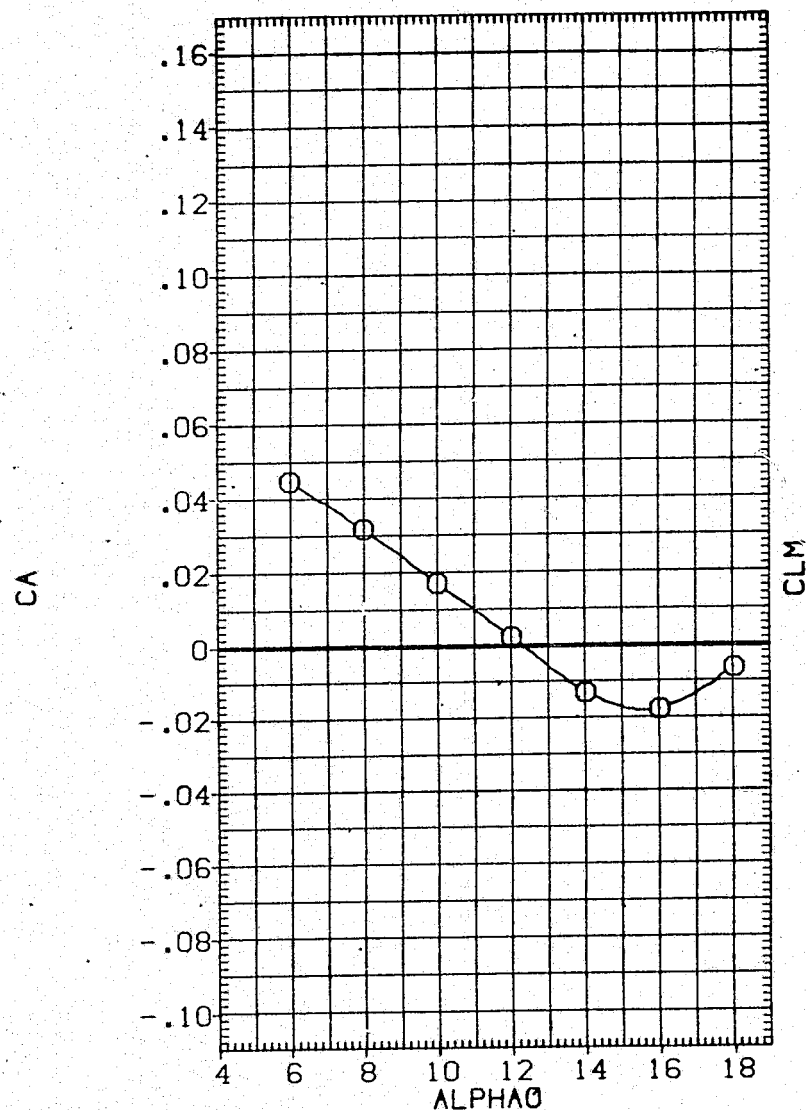


FIG 5 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 02

(A)MACH = .48

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN006) CA20 02 S2 S3
 (NGN018) CA20 02 S1

ORBITER DATA
 ORBITER DATA

ELEVON 5.000
 AILRON .000
 BETA0 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

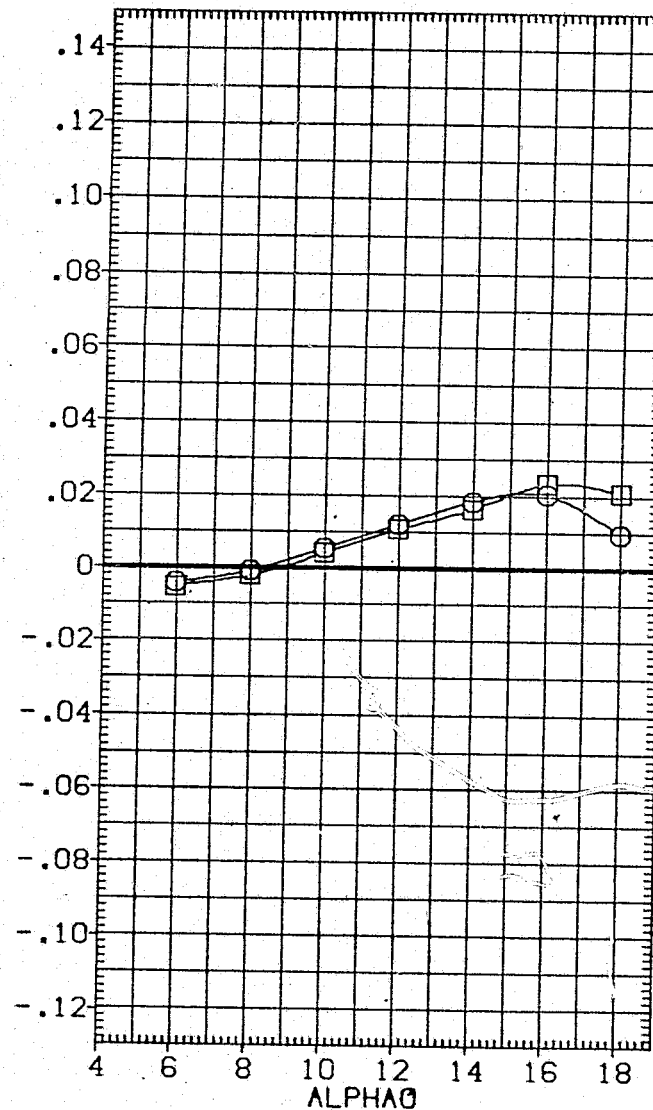
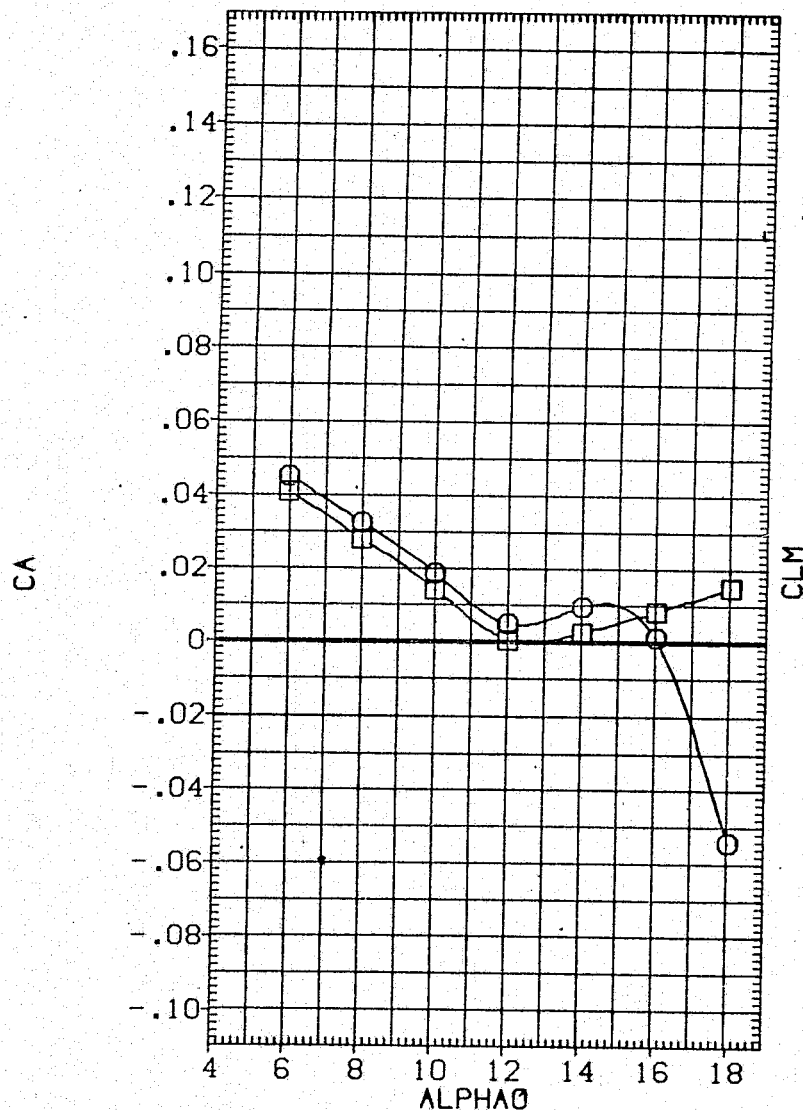


FIG 5 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 02

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN006) CA20 02 S2 S3
 (NGN018) DATA NOT AVAILABLE

ORBITER DATA

ELEVON 5.000 5.000
 AILRON .000 .000
 BETA0 .000 .000

REFERENCE INFORMATION

SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

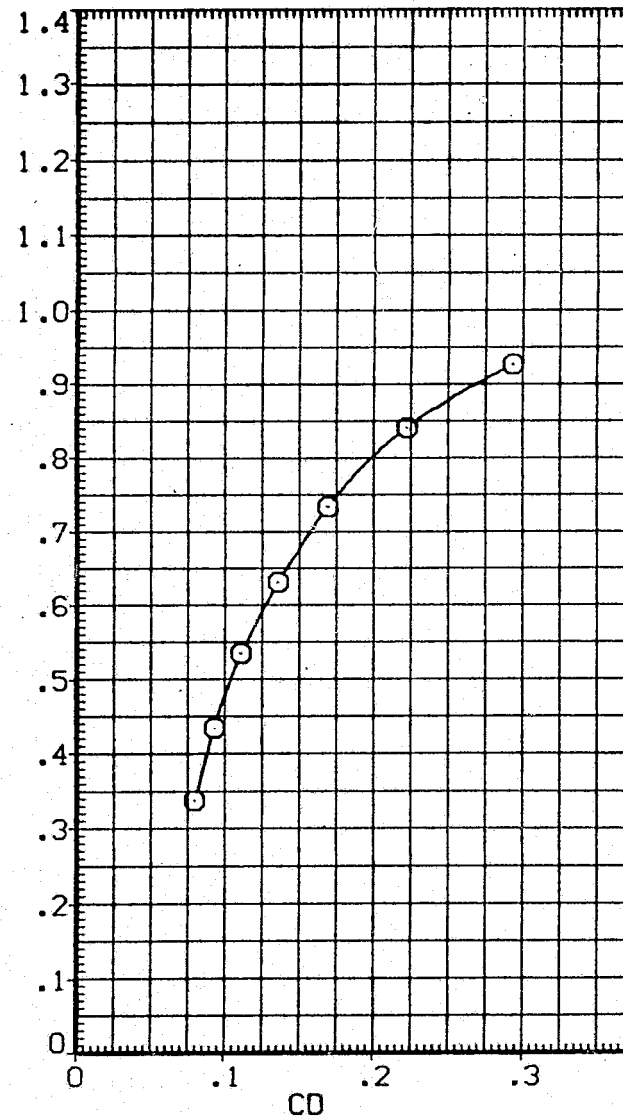
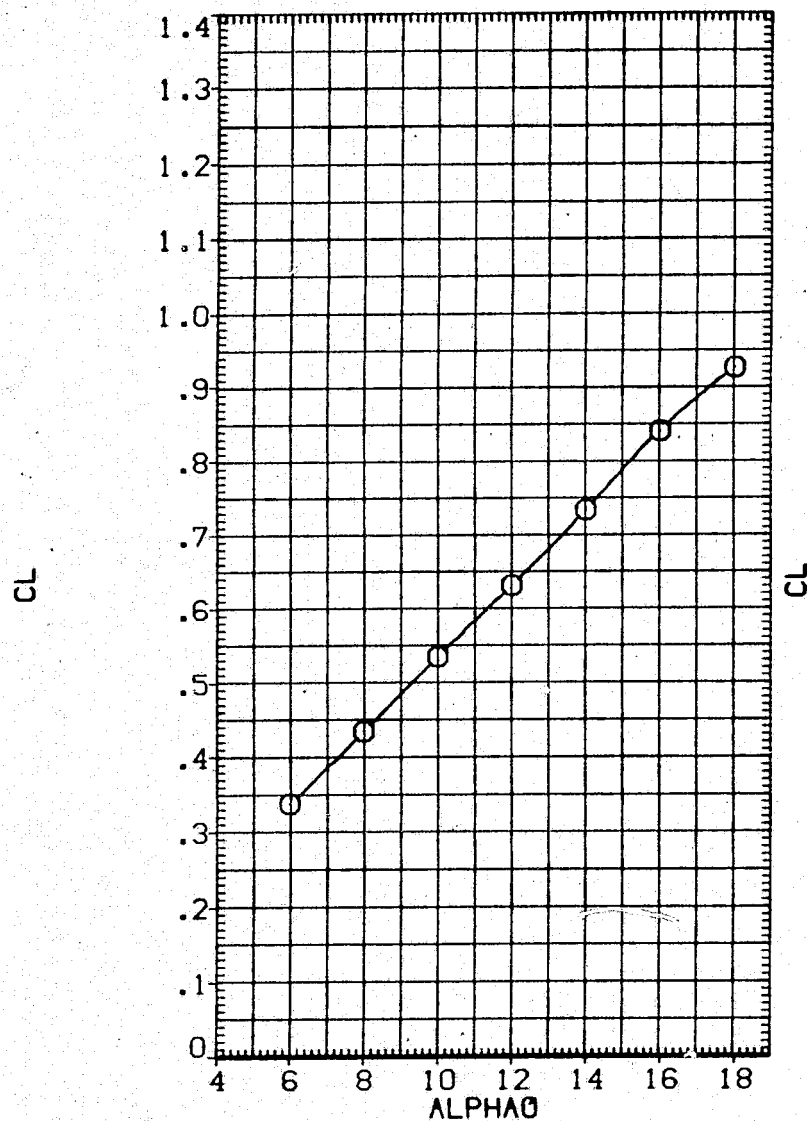


FIG 5 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 02

(A)MACH = .48

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN006)	CA20
(NGN018)	CA20

ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0
5.000	.000	.000
5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

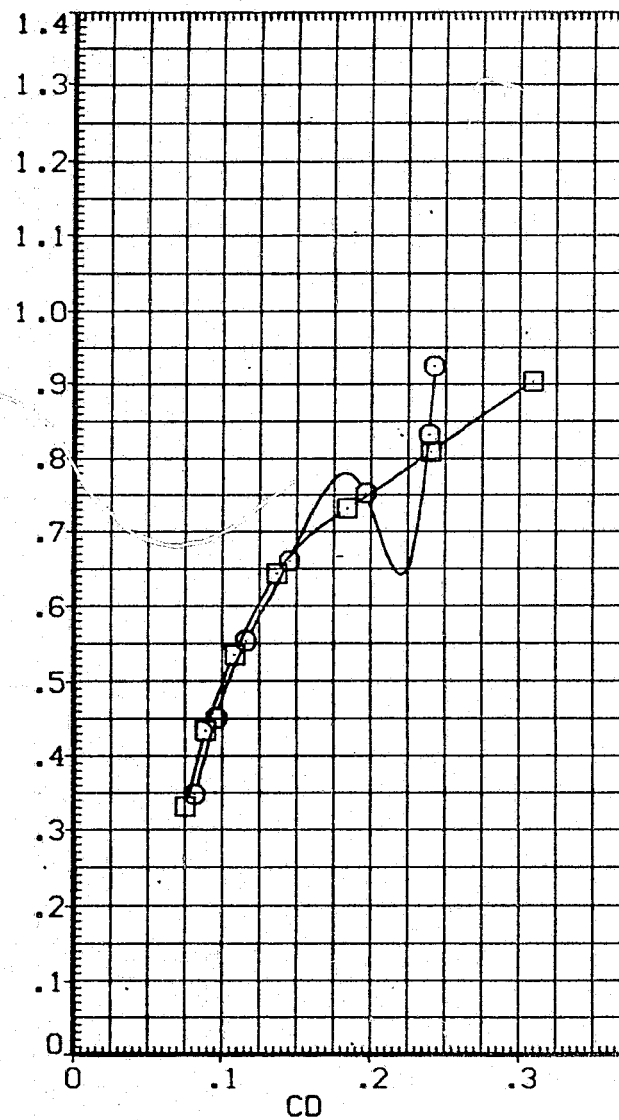
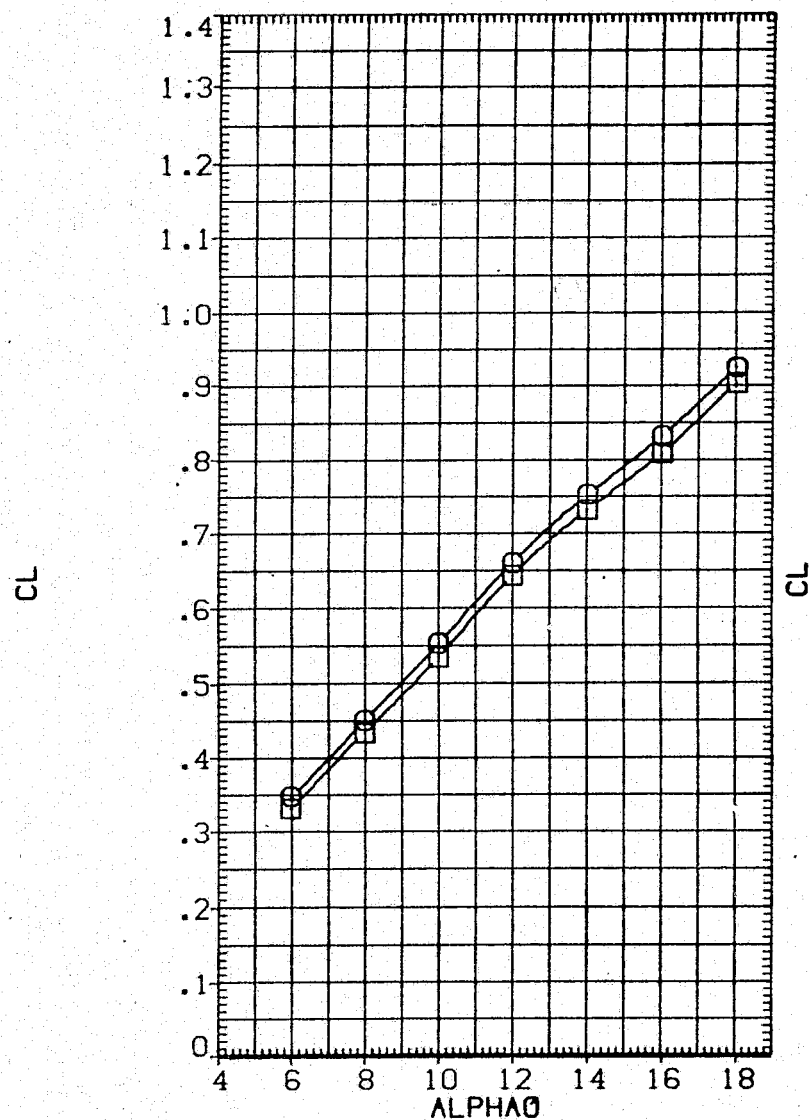


FIG 5 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 02
(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN006) ☐ CA20 02 S2 S3
 (NGN018) ☐ DATA NOT AVAILABLE

ORBITER DATA

ELEVON	AILRON	BETA0
5.000	.000	.000
5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

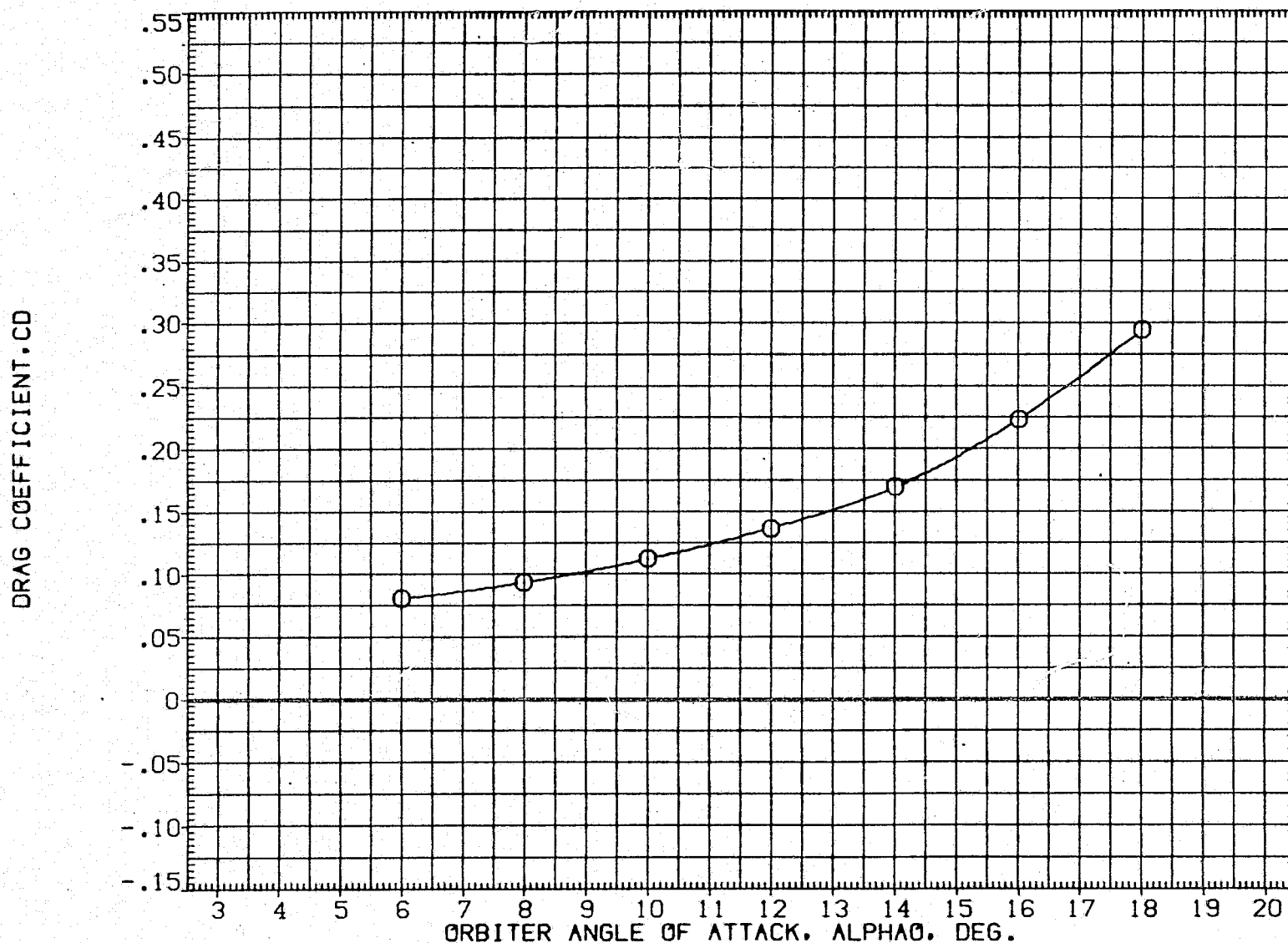


FIG 5 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 02

(A)MACH = .48

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN006)	CA20
(NGN018)	CA20

02 S2 S3
02 S1

ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0
5.000	.000	.000
5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

DRAG COEFFICIENT, CD

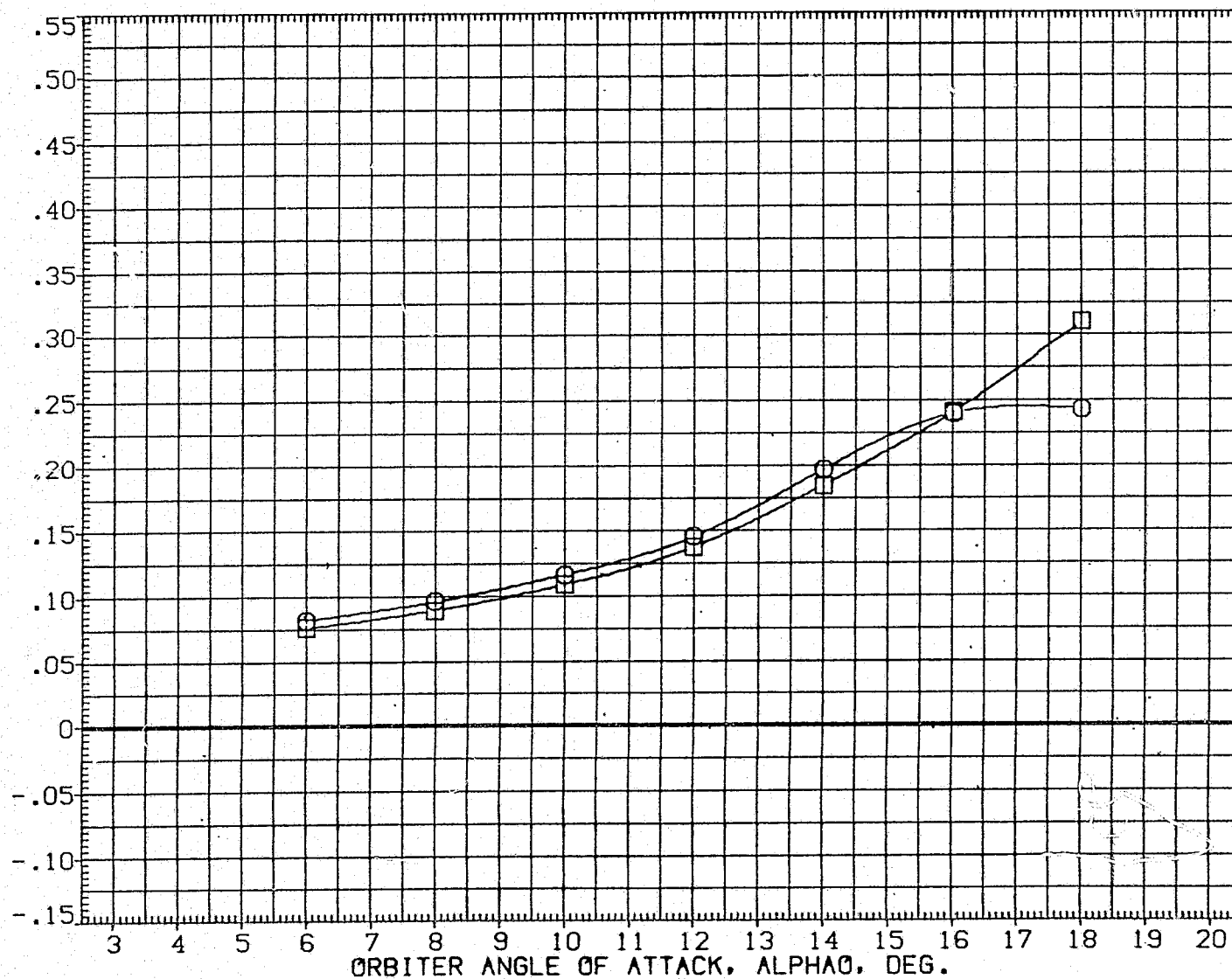


FIG 5 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 02

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN006) ○ CA20 02 S2 S3
 (NGN018) □ DATA NOT AVAILABLE

ORBITER DATA ELEVON AILRON BETA0
 5.000 .000 .000
 5.000 .000 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

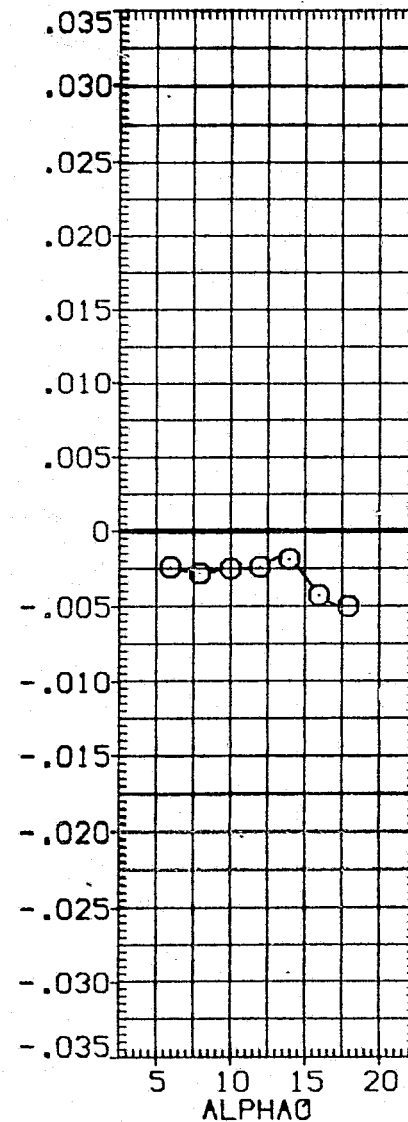
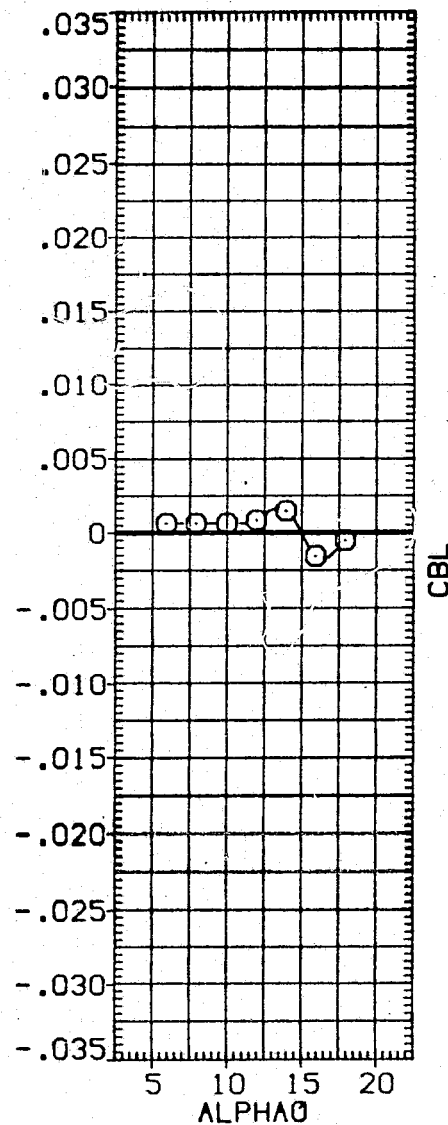
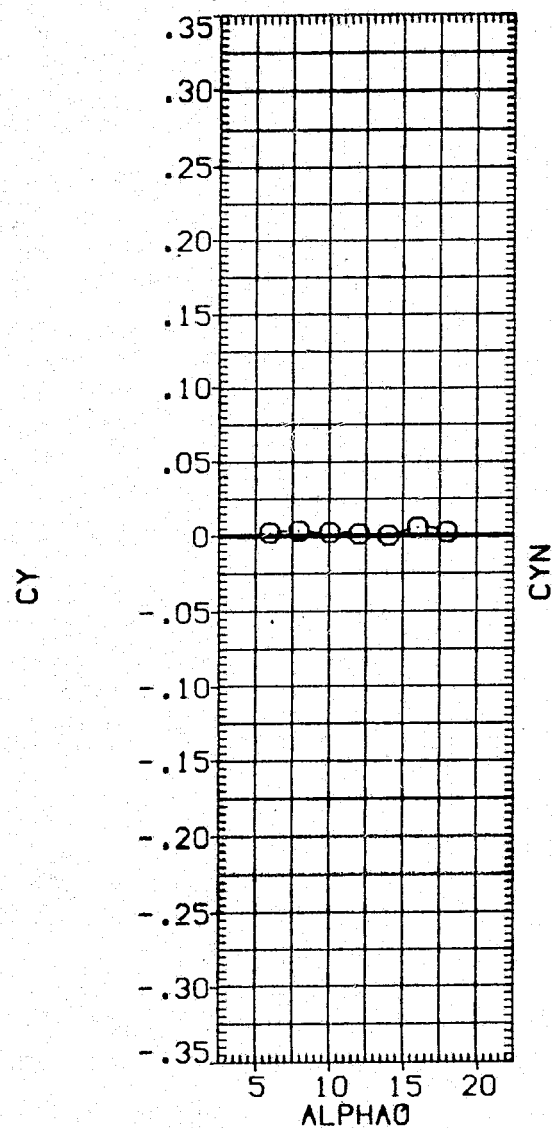


FIG 5 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 02

(A)MACH = .48

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN006)	CA20 02 S2 S3
(NGN018)	CA20 02 S1

	ELEVON	AILRON	BETA0
ORBITER DATA	5.000	.000	.000
ORBITER DATA	5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.3100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

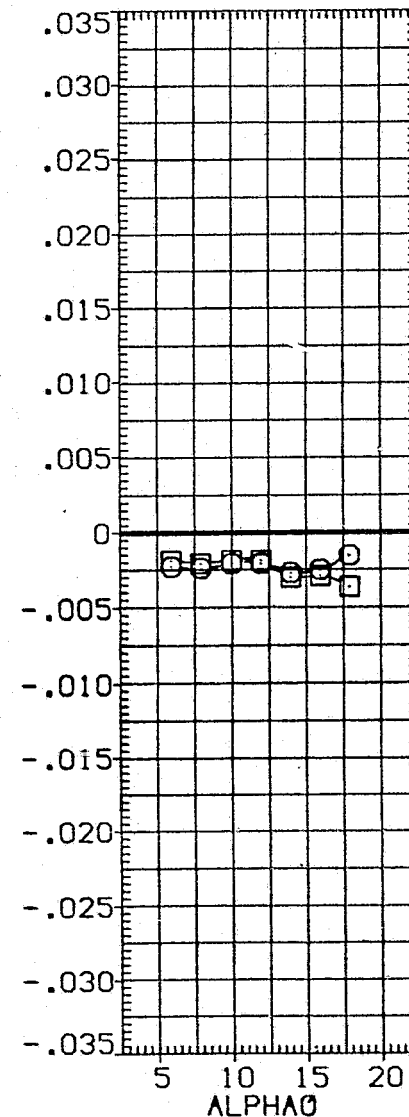
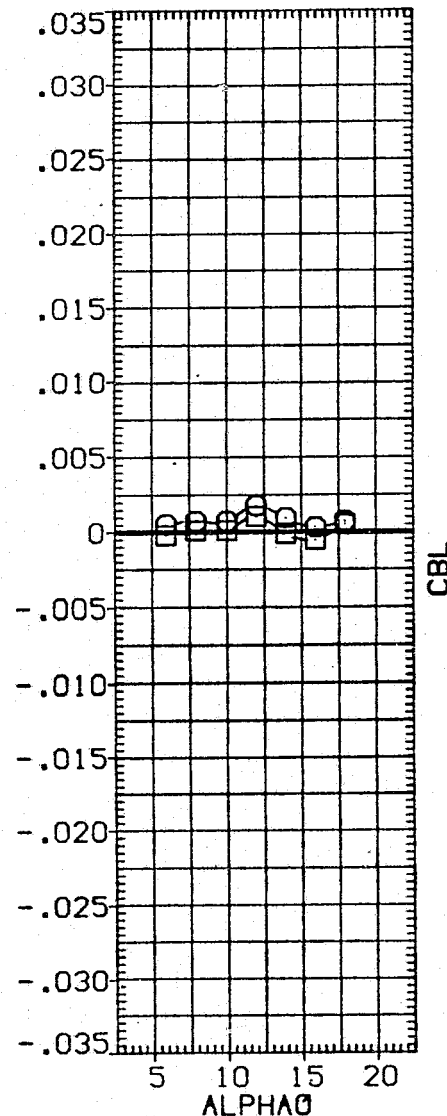
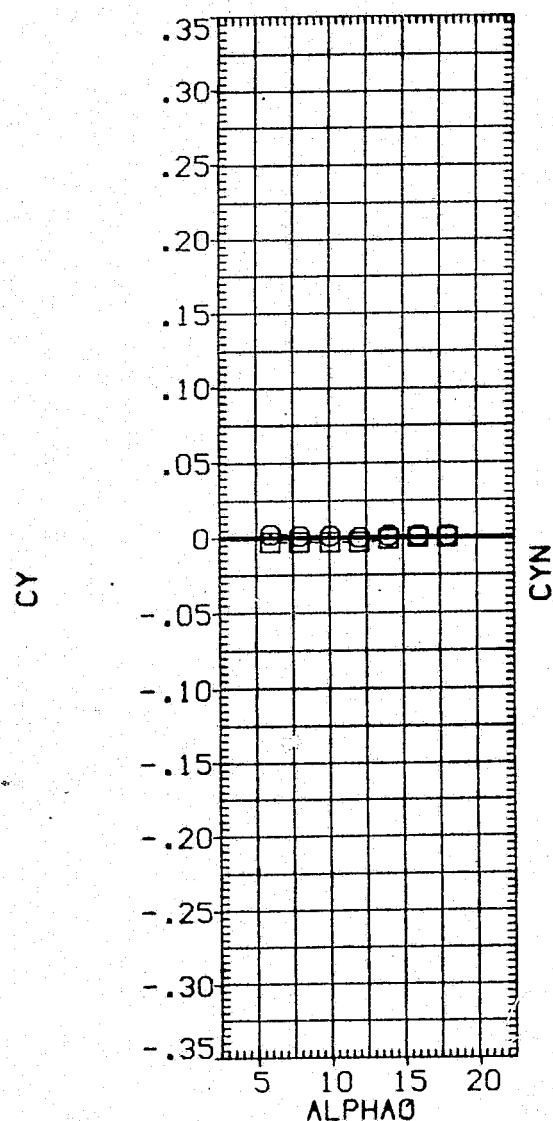


FIG 5 EFFECT OF ORBITER SUPPORT STRUT MOUNTING SYSTEM ON 02
(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(NGN008)	□	DATA NOT AVAILABLE
(NGN010)	○	CA20 01 S1
(NGN011)	◇	DATA NOT AVAILABLE
(NGN009)	△	DATA NOT AVAILABLE

ORBITER DATA

ELEVON	AILRON	BETA0
.000	.000	.000
5.000	.000	.000
10.000	.000	.000
5.000	-10.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FF.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

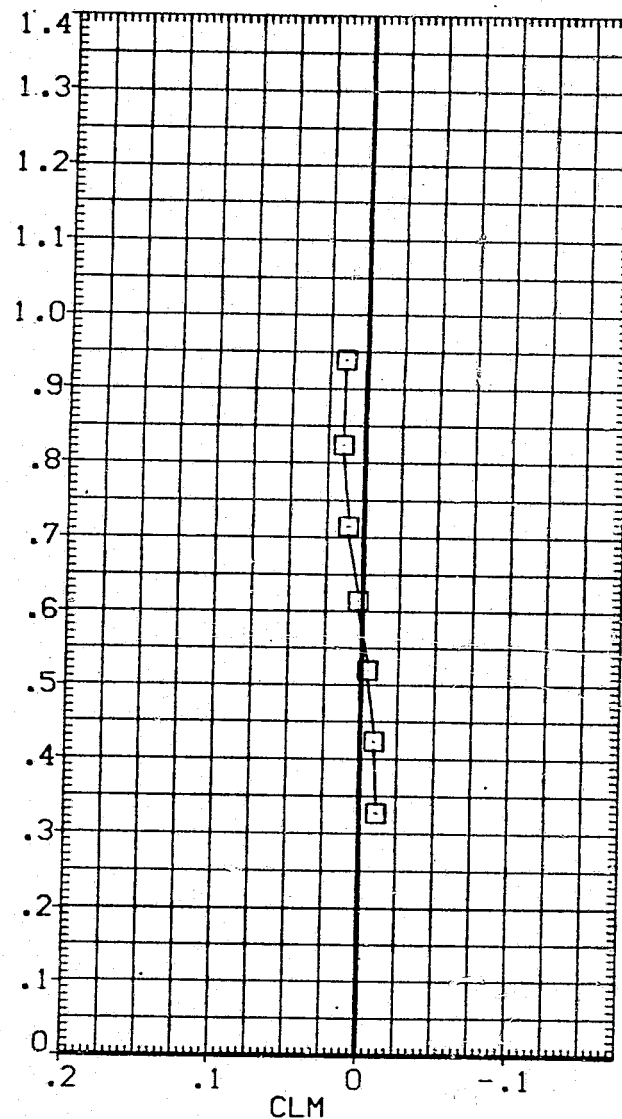
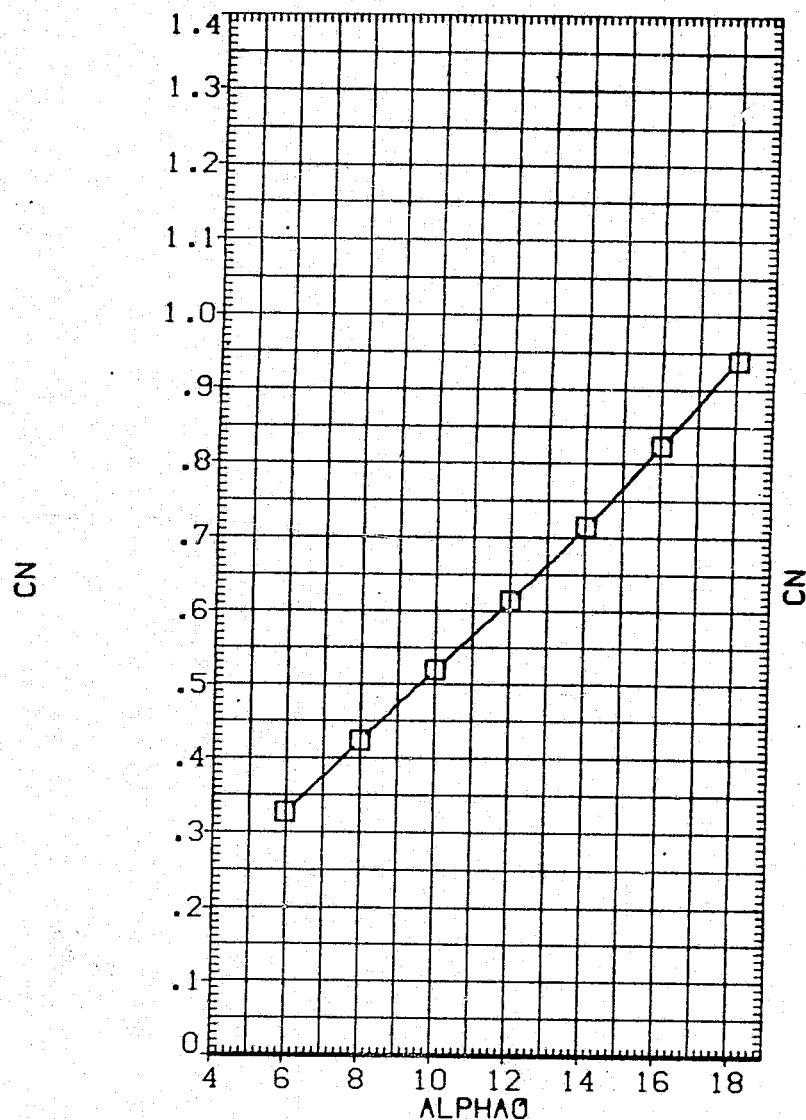


FIG 6 ORBITER ALONE ELEVON AND AILERON EFFECTS - 01

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(NGN008) □ CA20 01 S1
 (NGN010) □ CA20 01 S1
 (NGN011) ◇ CA20 01 S1
 (NGN009) △ CA20 01 S1

ORBITER DATA
 ORBITER DATA
 ORBITER DATA
 ORBITER DATA

ELEVON AILERON BETA0
 .000 .000 .000
 5.000 .000 .000
 10.000 .000 .000
 5.000 -10.000 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

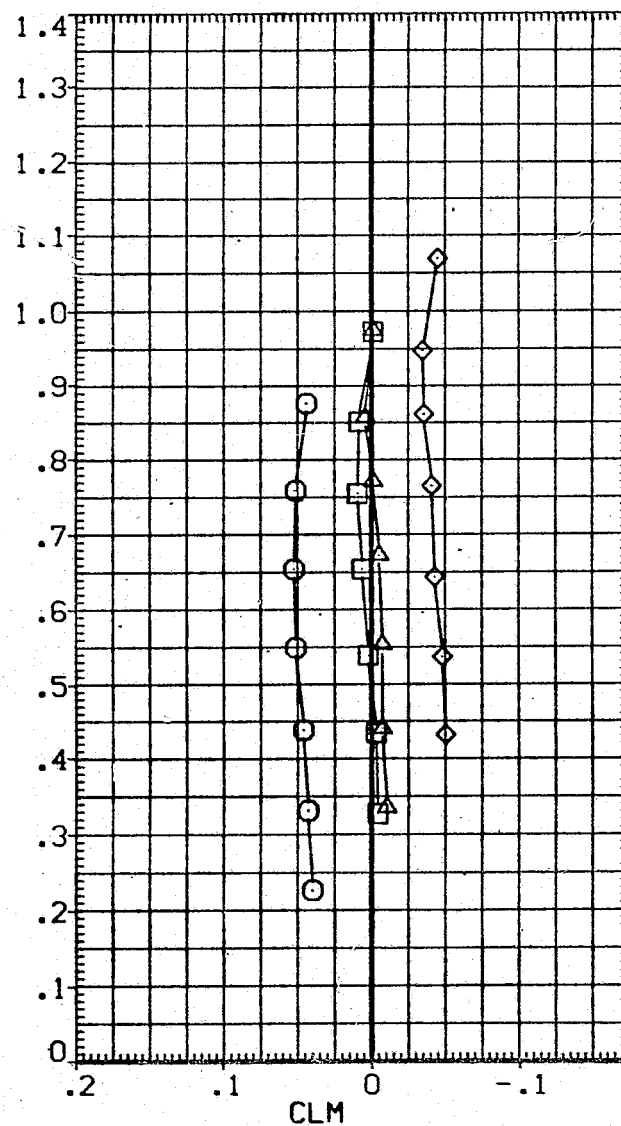
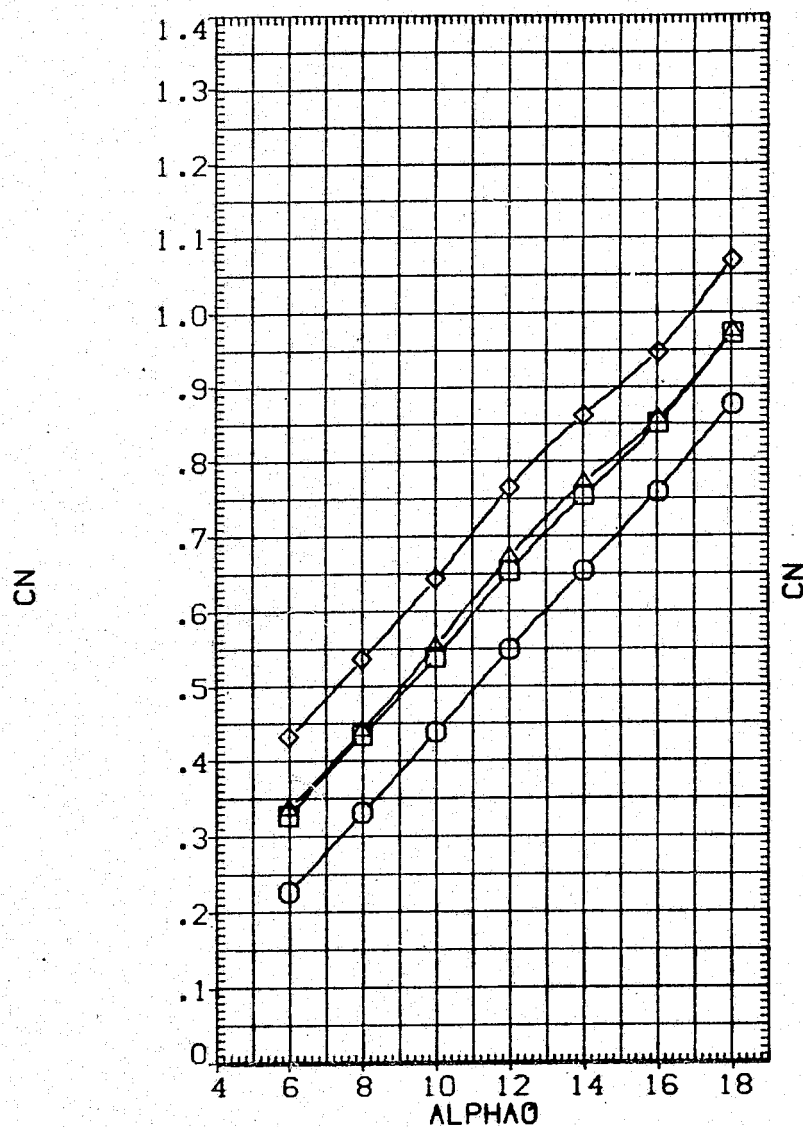


FIG 6 ORBITER ALONE ELEVON AND AILERON EFFECTS - 01

(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(NGN008)	□	DATA NOT AVAILABLE
(NGN010)	□	CA20 01 S1
(NGN011)	□	DATA NOT AVAILABLE
(NGN009)	△	DATA NOT AVAILABLE

ORBITER DATA

ELEVON	AILRON	BETA0
.000	.000	.000
5.000	.000	.000
10.000	.000	.000
5.000	-10.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

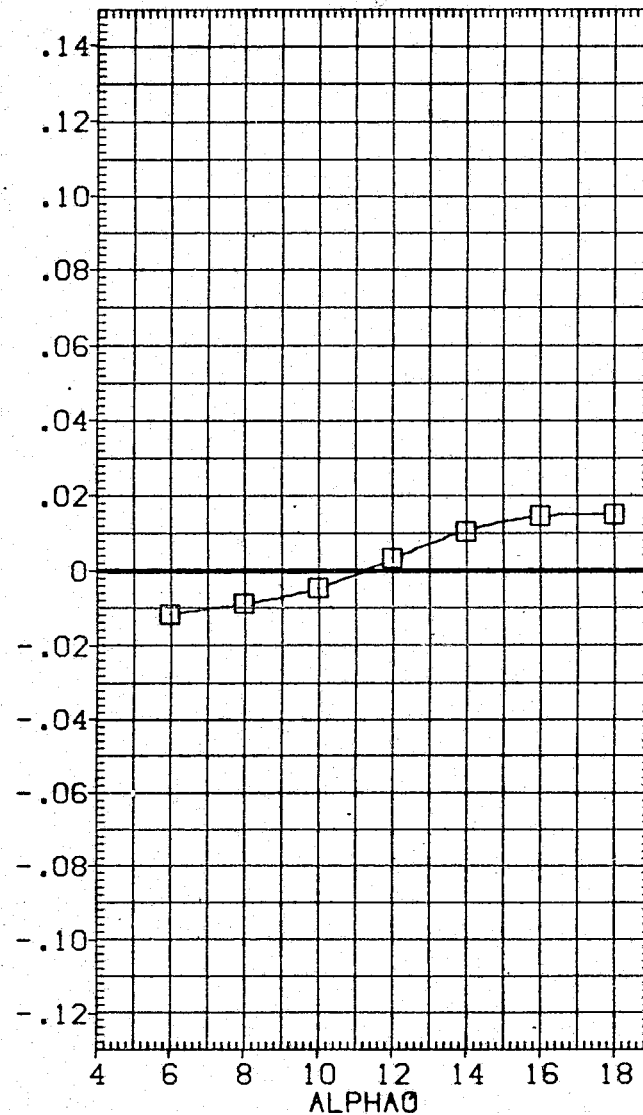
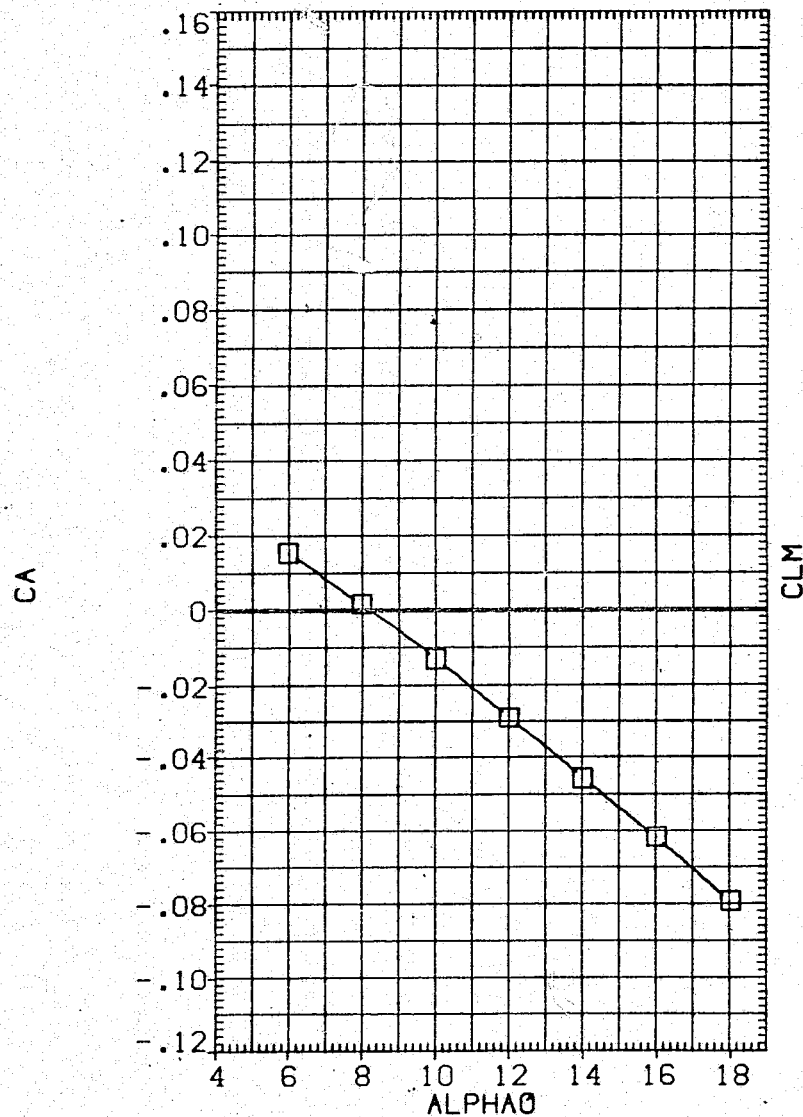


FIG 6 ORBITER ALONE ELEVON AND AILERON EFFECTS - 01

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(NGN008) CA20 01 S1
 (NGN010) CA20 01 S1
 (NGN011) CA20 01 S1
 (NGN009) CA20 01 S1

ORBITER DATA
 ORBITER DATA
 ORBITER DATA
 ORBITER DATA

ELEVON .000 .000 .000
 AILERON 5.000 .000 .000
 BETA0 10.000 .000 .000
 5.000 -10.000 .000

REFERENCE INFORMATION

SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

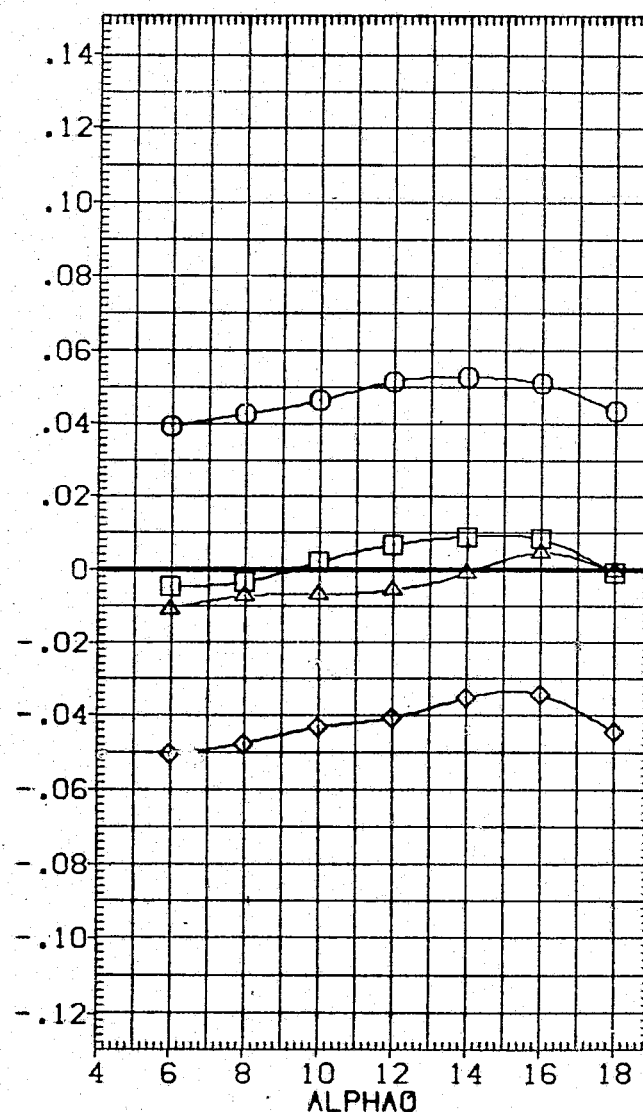
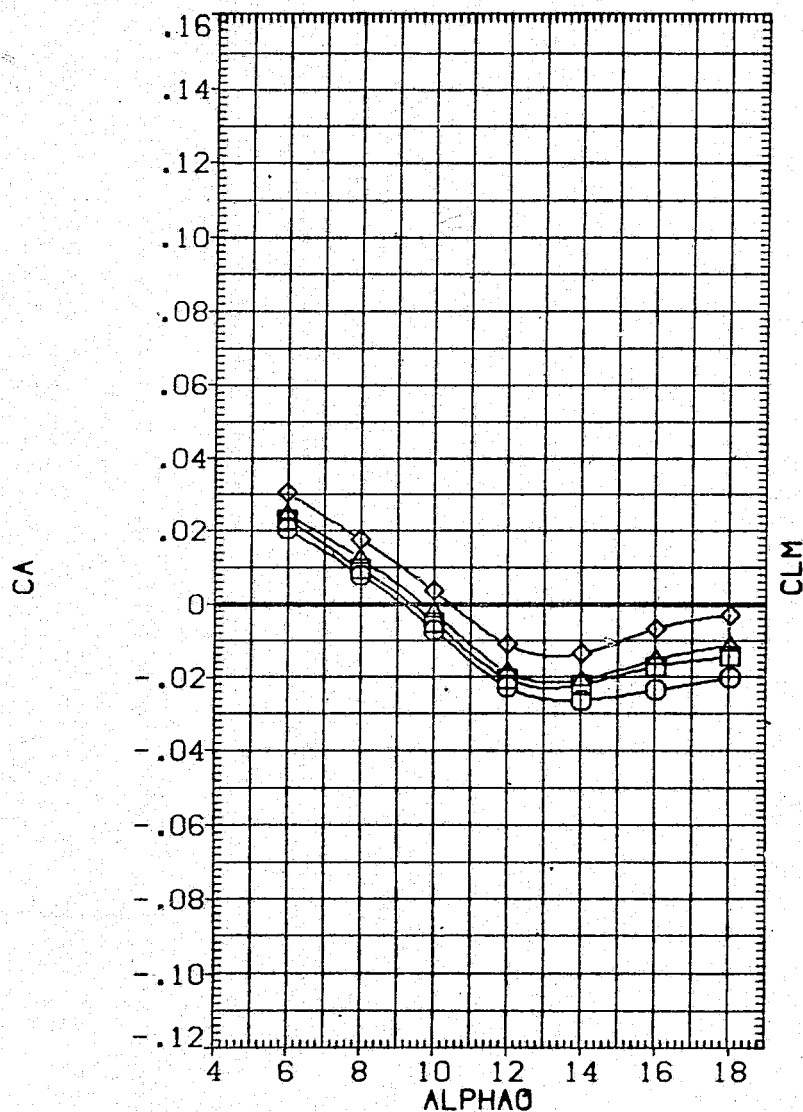


FIG 6 ORBITER ALONE ELEVON AND AILERON EFFECTS - 01

(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(NGN008) ○ DATA NOT AVAILABLE
 (NGN010) □ CA20 01 SI
 (NGN011) ◇ DATA NOT AVAILABLE
 (NGN009) △ DATA NOT AVAILABLE

ORBITER DATA

ELEVON	AILRON	BETA0
.000	.000	.000
5.000	.000	.000
10.000	.000	.000
5.000	-10.000	.000

REFERENCE INFORMATION

	SO.FT.
SREF 2690.0000	SO.FT.
LREF 474.8100	IN.
BREF 936.6800	IN.
XMRP 1109.0000	IN.X0
YMRP .0000	IN.Y0
ZMRP 375.0000	IN.Z0
SCALE .0300	

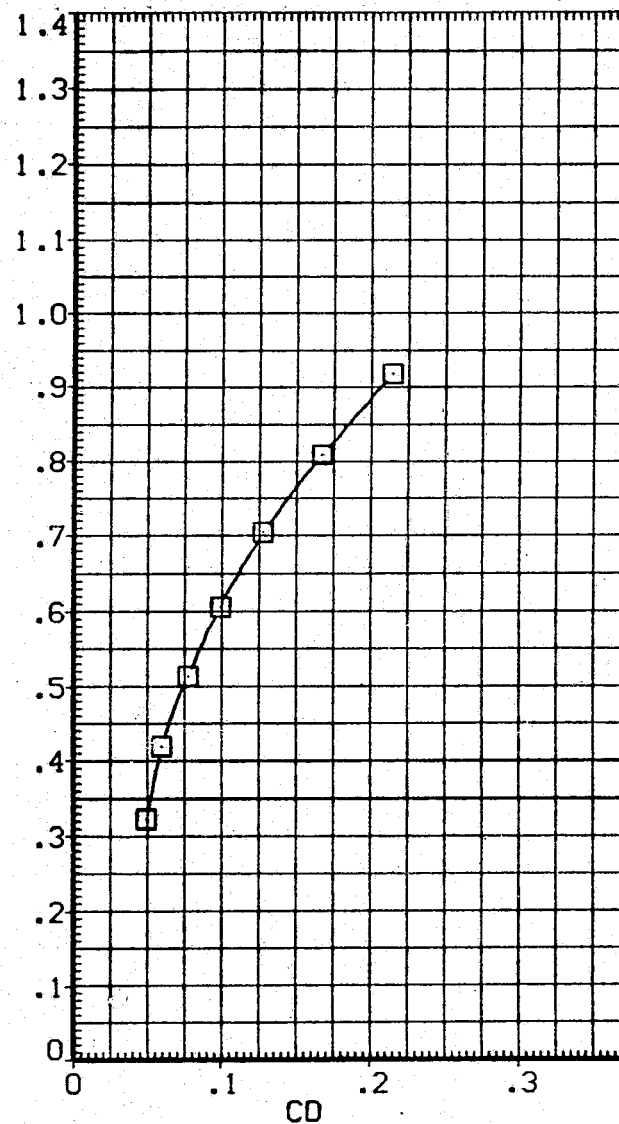
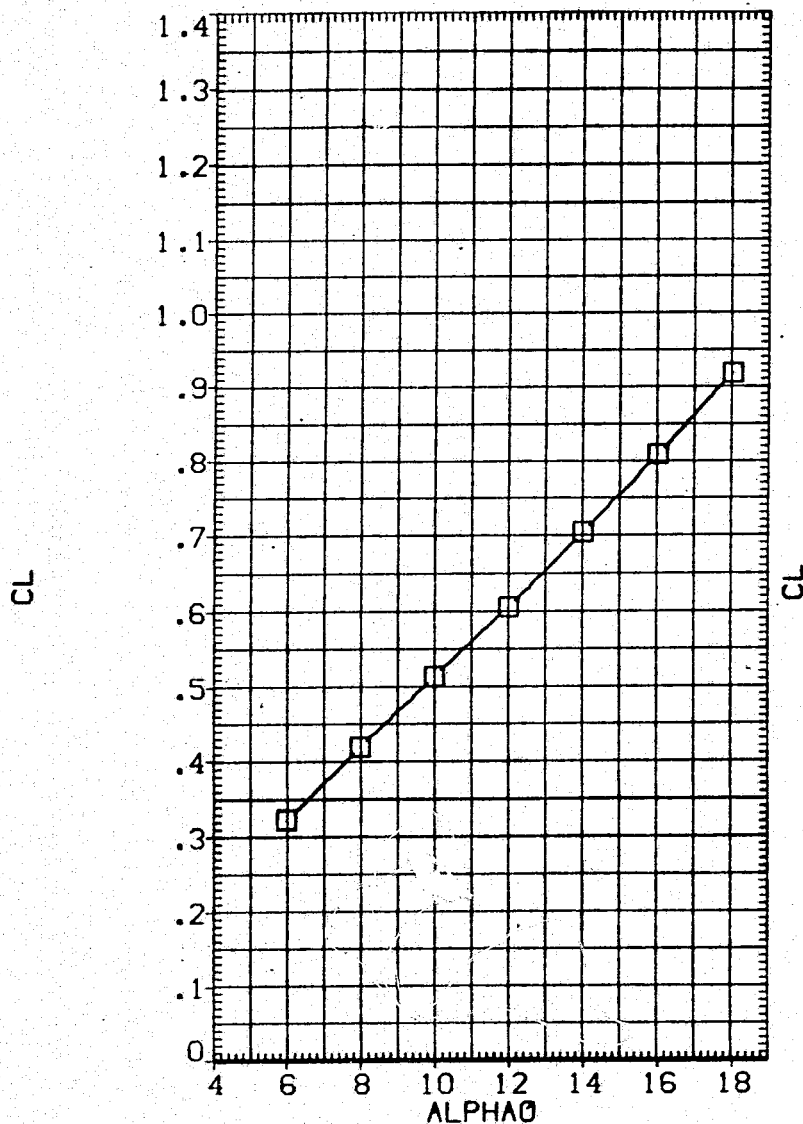


FIG 6 ORBITER ALONE ELEVON AND AILERON EFFECTS - 01

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN008)	CA20 01 S1
(NGN010)	CA20 01 S1
(NGN011)	CA20 01 S1
(NGN009)	CA20 01 S1

ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0
.000	.000	.000
5.000	.000	.000
10.000	.000	.000
5.000	-10.000	.000

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT.
LREF	474.9100 IN.
BREF	936.6800 IN.
XMRP	1109.0000 IN.X0
YMRP	.0000 IN.Y0
ZMRP	375.0000 IN.Z0
SCALE	.0300

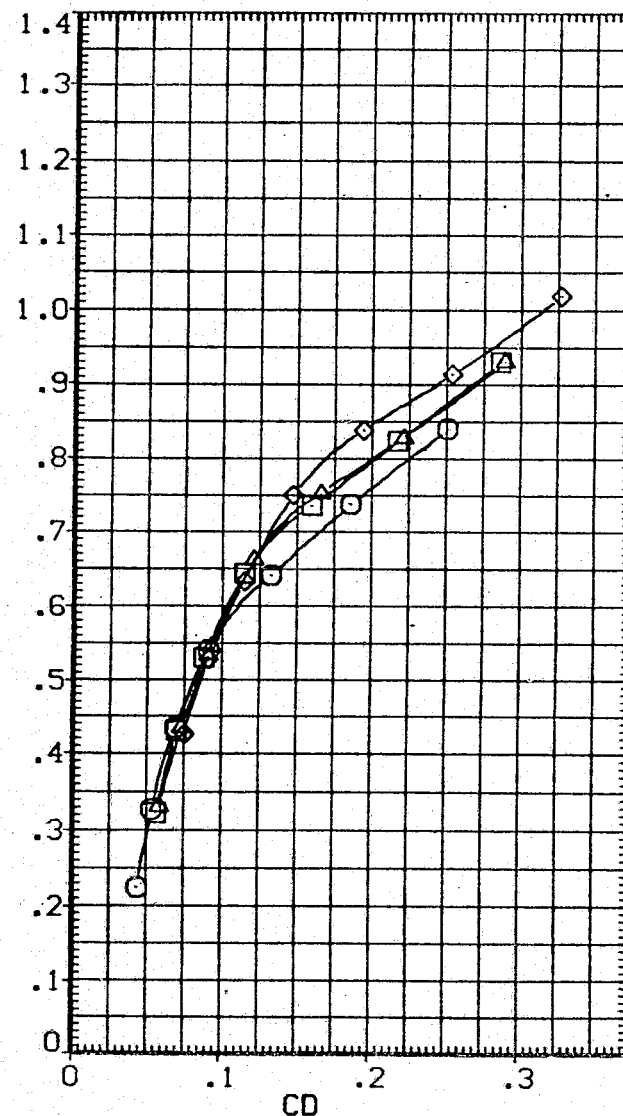
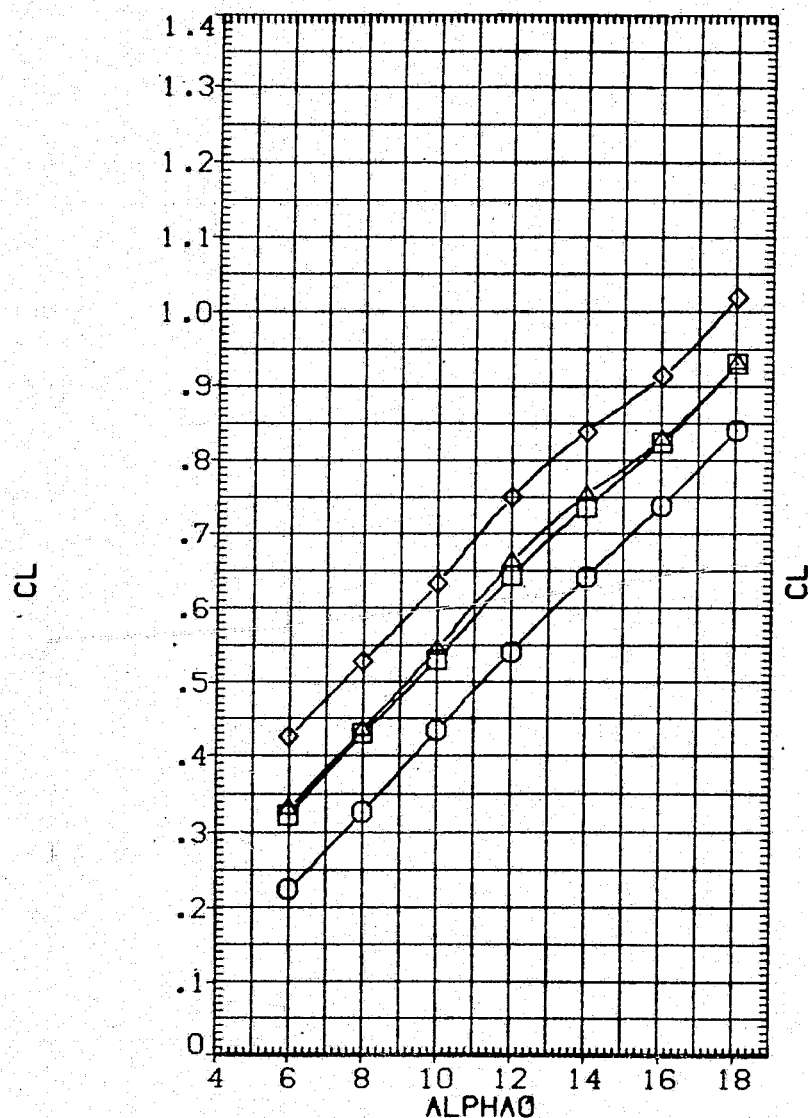


FIG 6 ORBITER ALONE ELEVON AND AILERON EFFECTS - 01
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN008)	DATA NOT AVAILABLE
(NGN010)	CA20 01 S1
(NGN011)	DATA NOT AVAILABLE
(NGN009)	DATA NOT AVAILABLE

ORBITER DATA	ELEVON	AILRON	BETA0
	.000	.000	.000
	5.000	.000	.000
	10.000	.000	.000
	5.000	-10.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

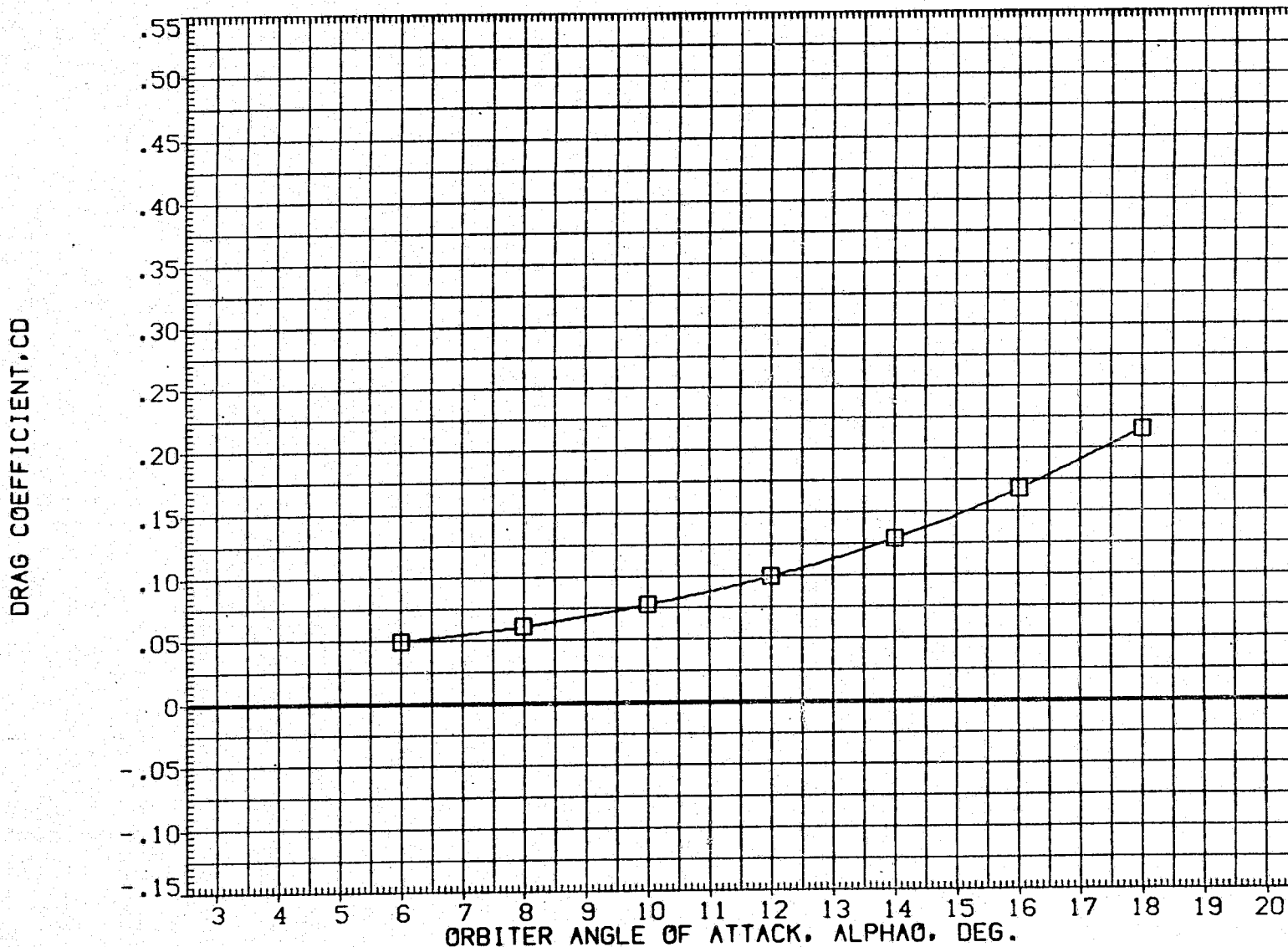






FIG 6 ORBITER ALONE ELEVON AND AILERON EFFECTS - 01

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(NGN008)  CA20 01 S1
 (NGN010)  CA20 01 S1
 (NGN011)  CA20 01 S1
 (NGN009)  CA20 01 S1

ORBITER DATA
 ORBITER DATA
 ORBITER DATA
 ORBITER DATA

ELEVON AILRON BETAO
 .000 .000 .000
 5.000 .000 .000
 10.000 .000 .000
 5.000 -10.000 .000

REFERENCE INFORMATION

SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

DRAG COEFFICIENT, CD

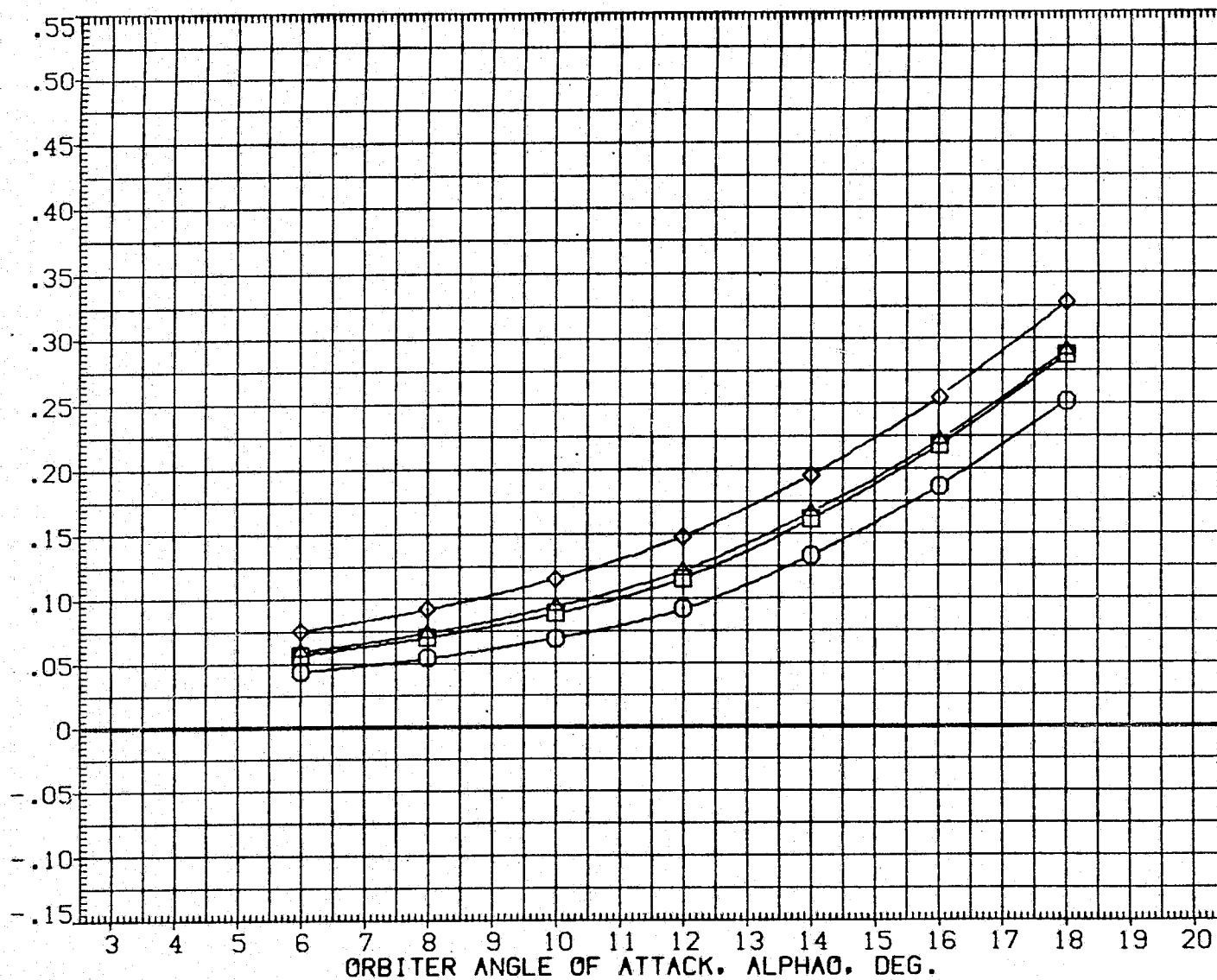


FIG 6 ORBITER ALONE ELEVON AND AILERON EFFECTS - 01

(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN008)	DATA NOT AVAILABLE
(NGN010)	CA20 01 S1
(NGN011)	DATA NOT AVAILABLE
(NGN009)	DATA NOT AVAILABLE

ORBITER DATA	ELEVON	AILRON	BETA0
	.000	.000	.000
	5.000	10.000	.000
	10.000	.000	.000
	5.000	-10.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

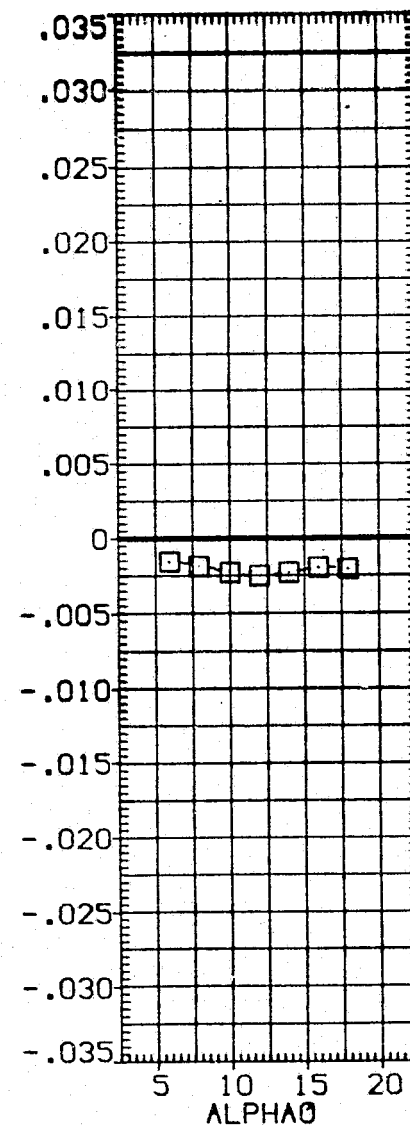
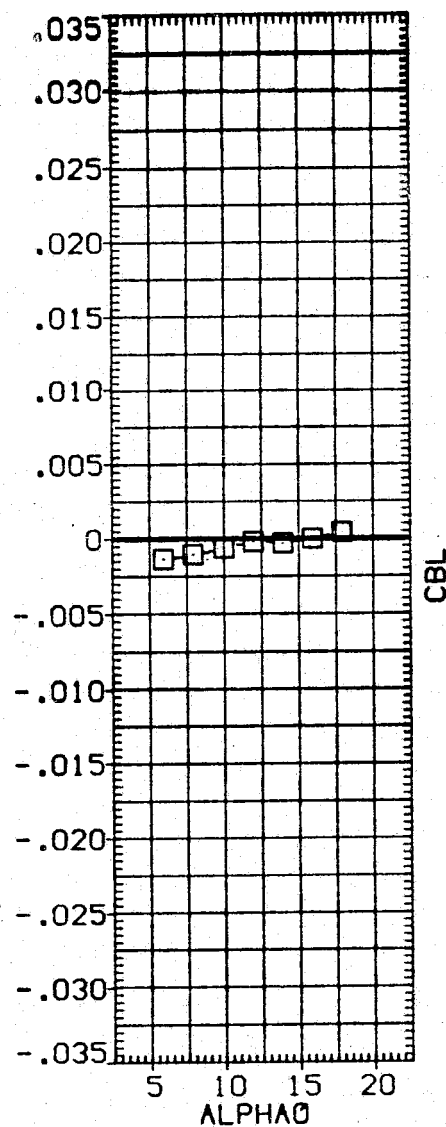
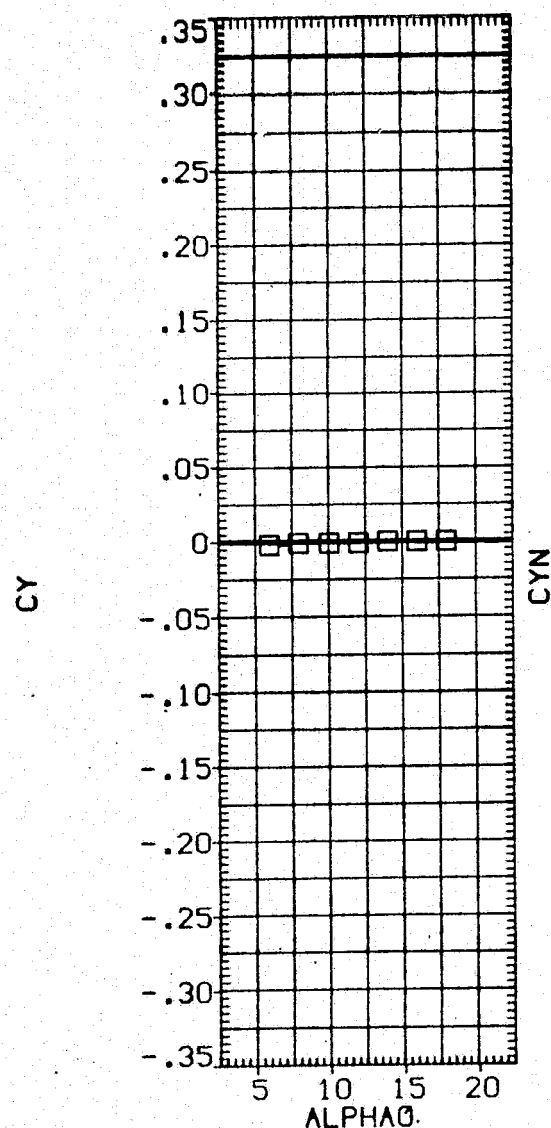


FIG 6 ORBITER ALONE ELEVON AND AILERON EFFECTS - 01
(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN008)	CA20 01 S1
(NGN010)	CA20 01 S1
(NGN011)	CA20 01 S1
(NGN009)	CA20 01 S1

	ELEVON	AILRON	BETA0
ORBITER DATA	.000	.000	.000
ORBITER DATA	5.000	.000	.000
ORBITER DATA	10.000	.000	.000
ORBITER DATA	5.000	-10.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

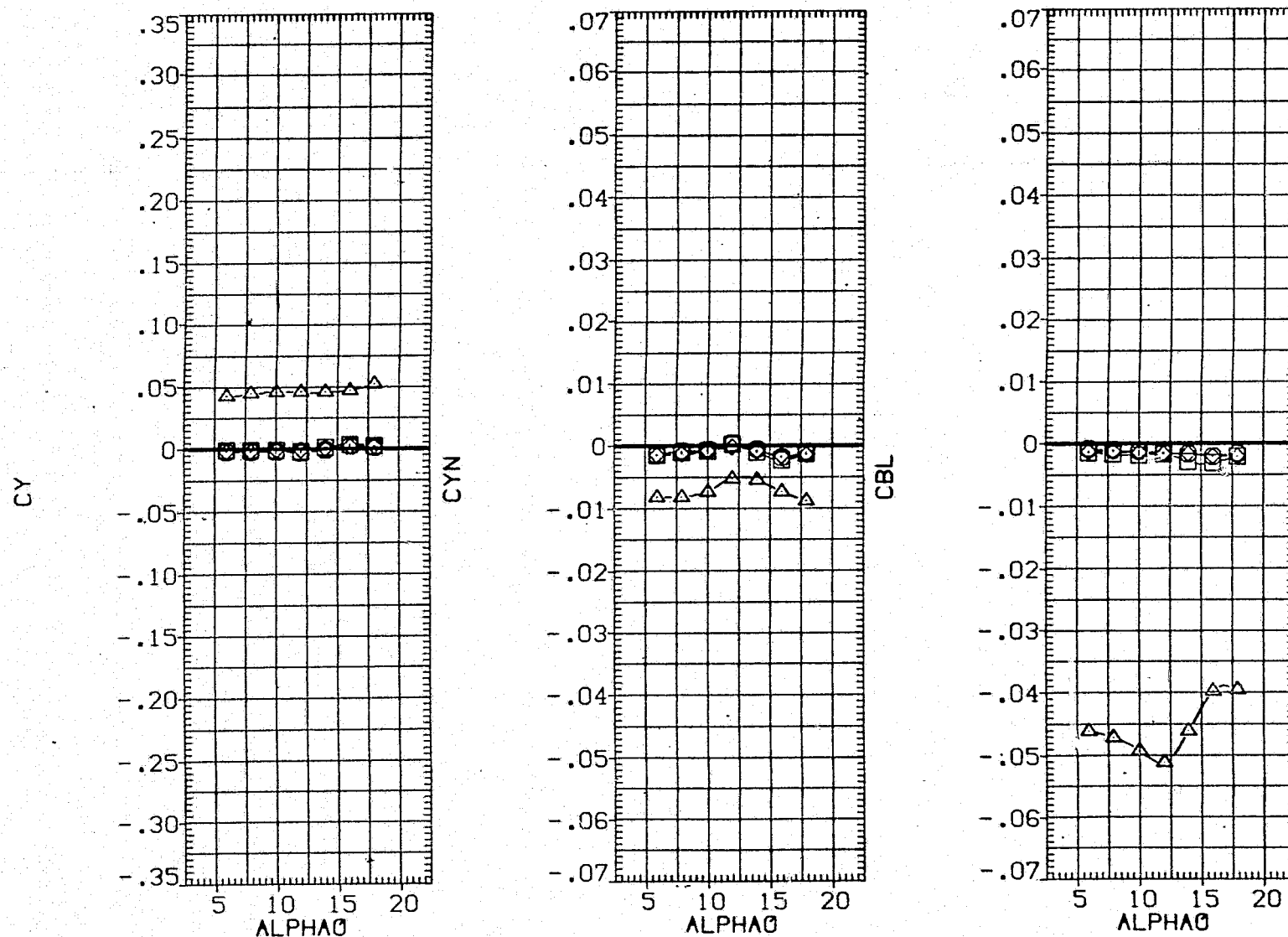


FIG 6 ORBITER ALONE ELEVON AND AILERON EFFECTS - 01
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN016)	CA20 02 S1
(NGN018)	CA20 02 S1
(NGN019)	CA20 02 S1
(NGN017)	CA20 02 S1

ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0
.000	.000	.000
5.000	.000	.000
10.000	.000	.000
5.000	-10.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

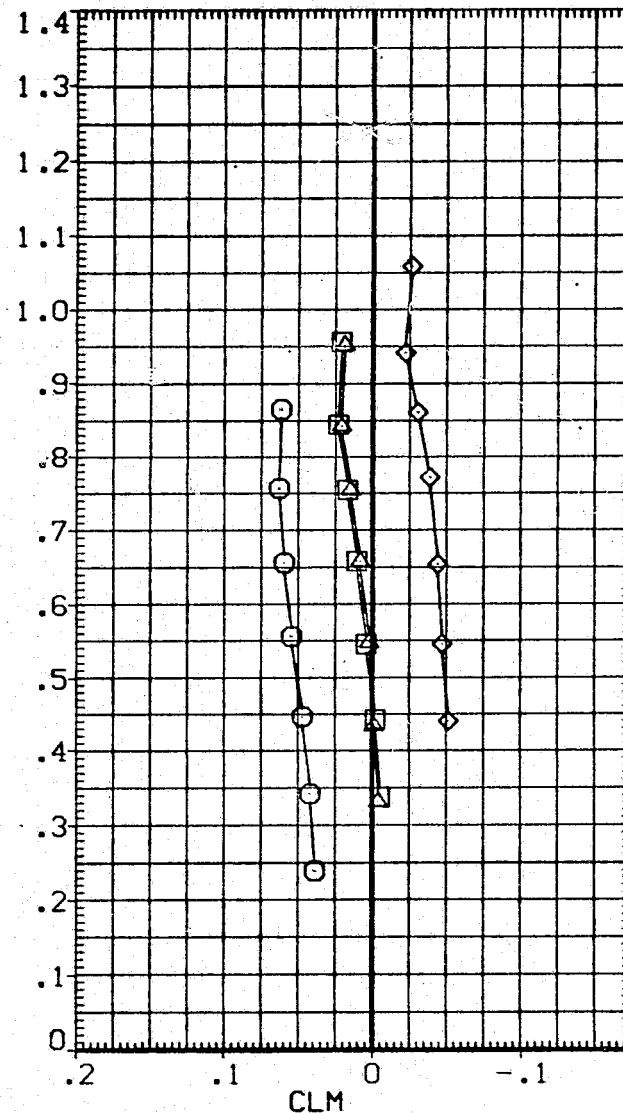
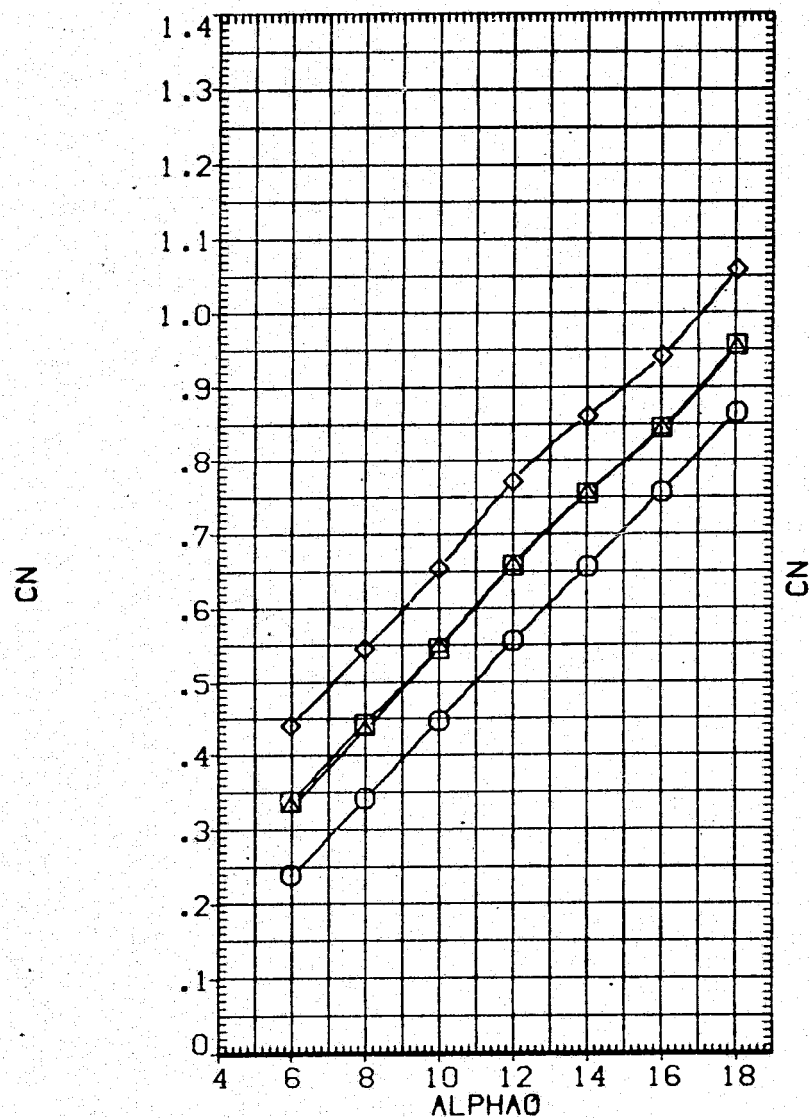


FIG 7 ORBITER ALONE ELEVON AND AILERON EFFECTS - 02

(A) MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN016)	CA20
(NGN018)	CA20
(NGN019)	CA20
(NGN017)	CA20

ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0
.000	.000	.000
5.000	.000	.000
10.000	.000	.000
5.000	-10.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMHP	1109.0000	IN.X0
YMHP	.0000	IN.Y0
ZMHP	375.0000	IN.Z0
SCALE	.0300	

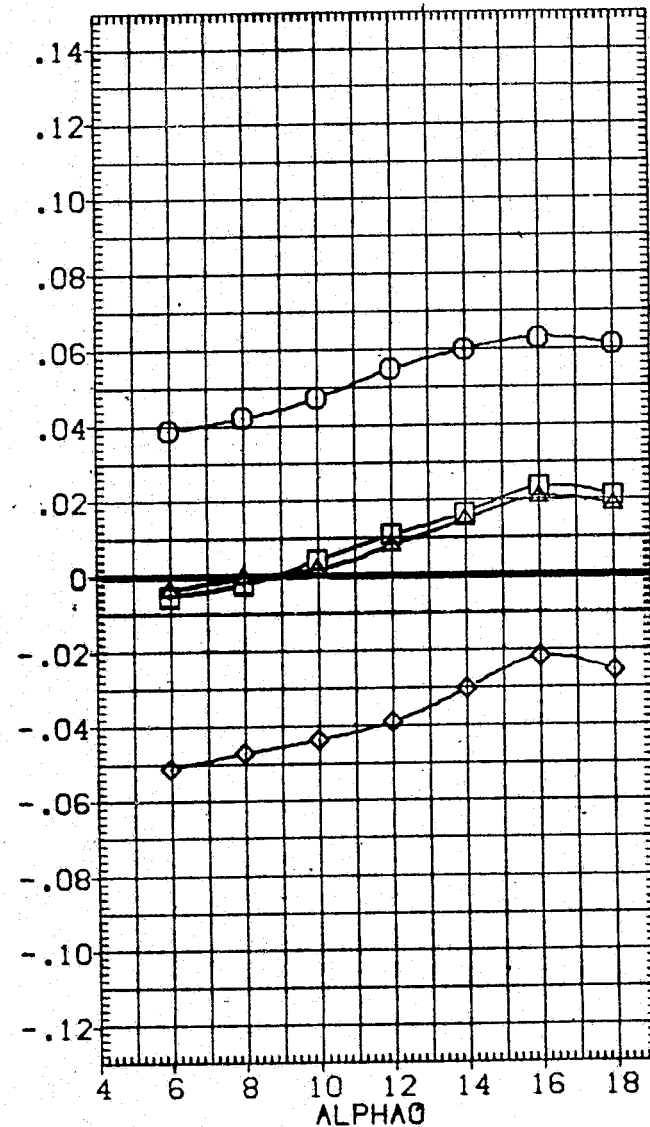
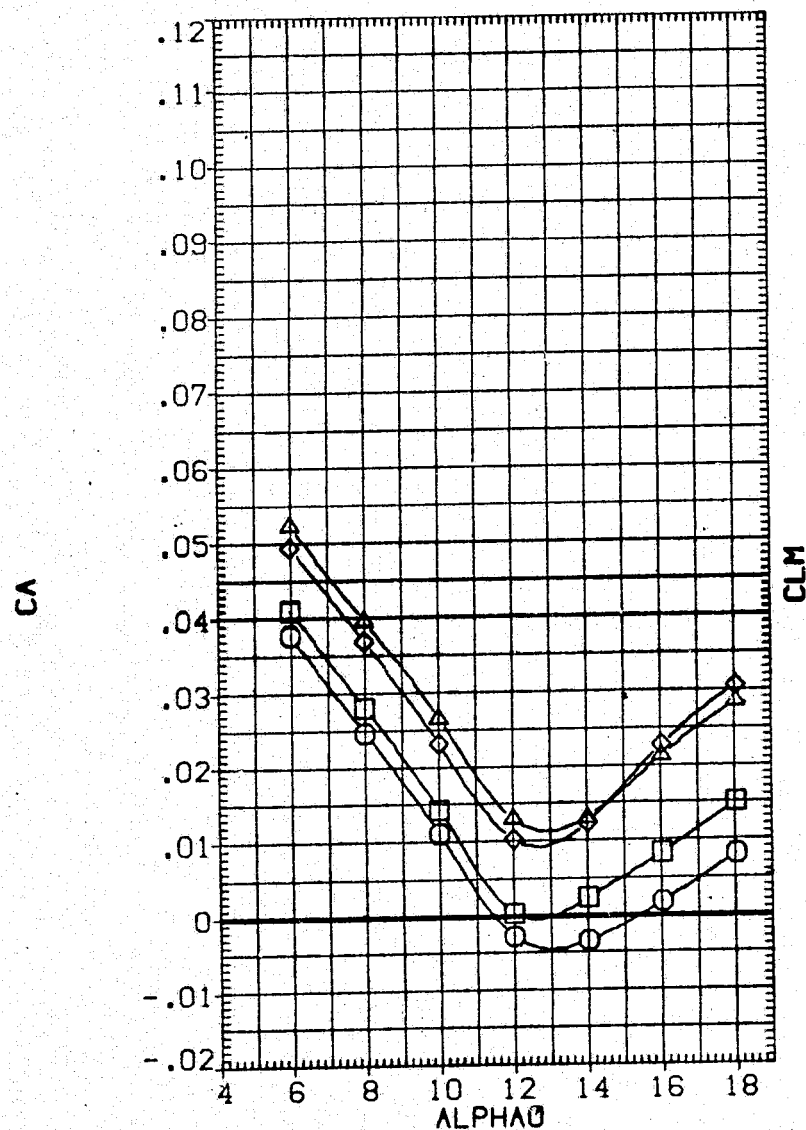


FIG 7 ORBITER ALONE ELEVON AND AILERON EFFECTS - 02
 (A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGND16)	CA20 02 S1
(NGND18)	CA20 02 S1
(NGND19)	CA20 02 S1
(NGND17)	CA20 02 S1

ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0
.000	.000	.000
5.000	.000	.000
10.000	.000	.000
5.000	-10.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

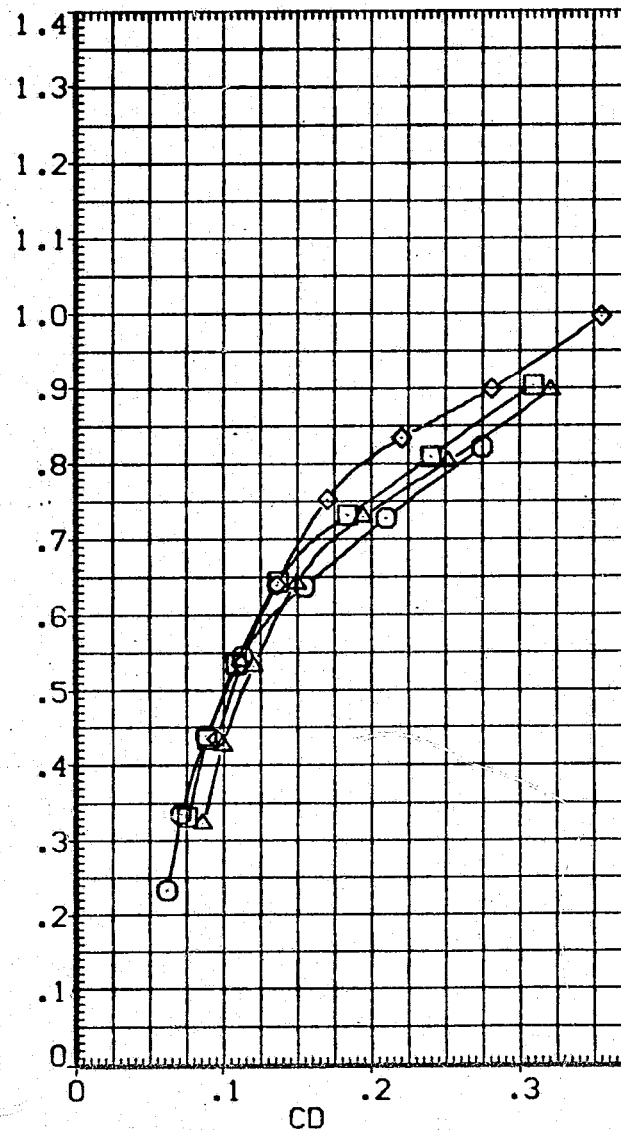
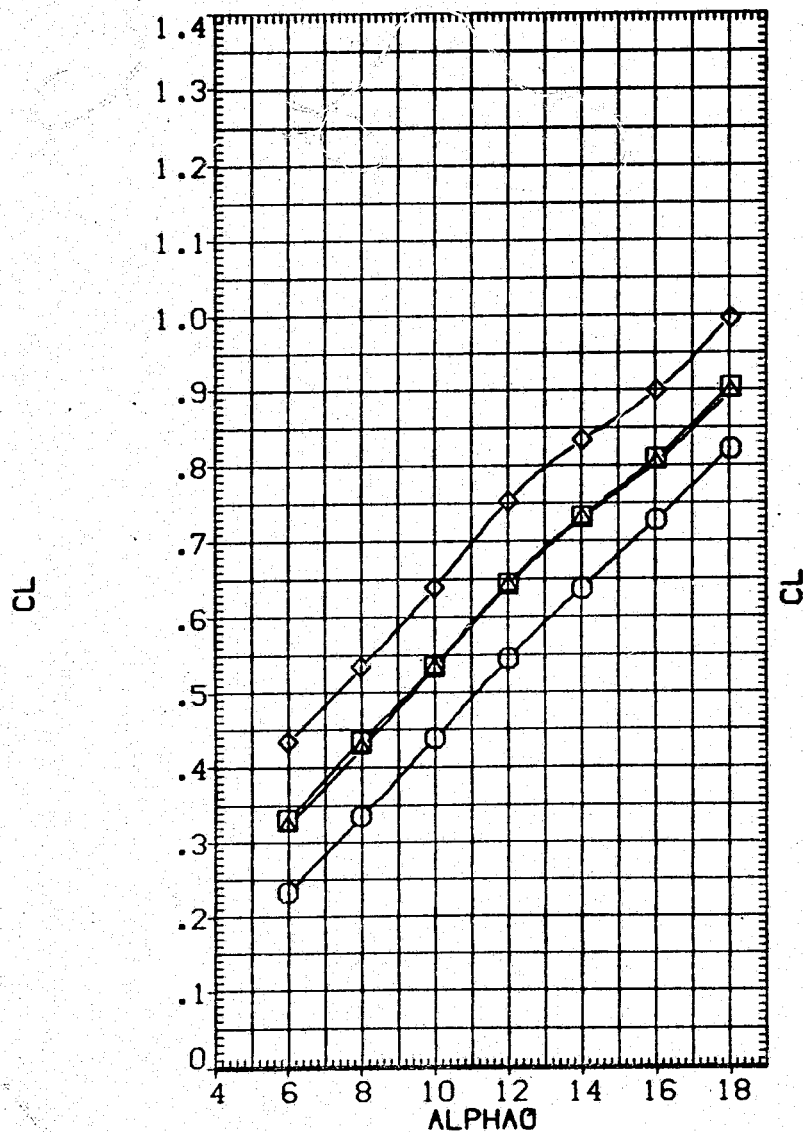


FIG 7 ORBITER ALONE ELEVON AND AILERON EFFECTS - 02

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN016) □	CA20 02 S1
(NGN018) □	CA20 02 S1
(NGN019) ◇	CA20 02 S1
(NGN017) △	CA20 02 S1

	ELEVON	AILRON	BETA0
ORBITER DATA	.000	.000	.000
ORBITER DATA	5.000	.000	.000
ORBITER DATA	10.000	.000	.000
ORBITER DATA	5.000	-10.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

DRAG COEFFICIENT, CD

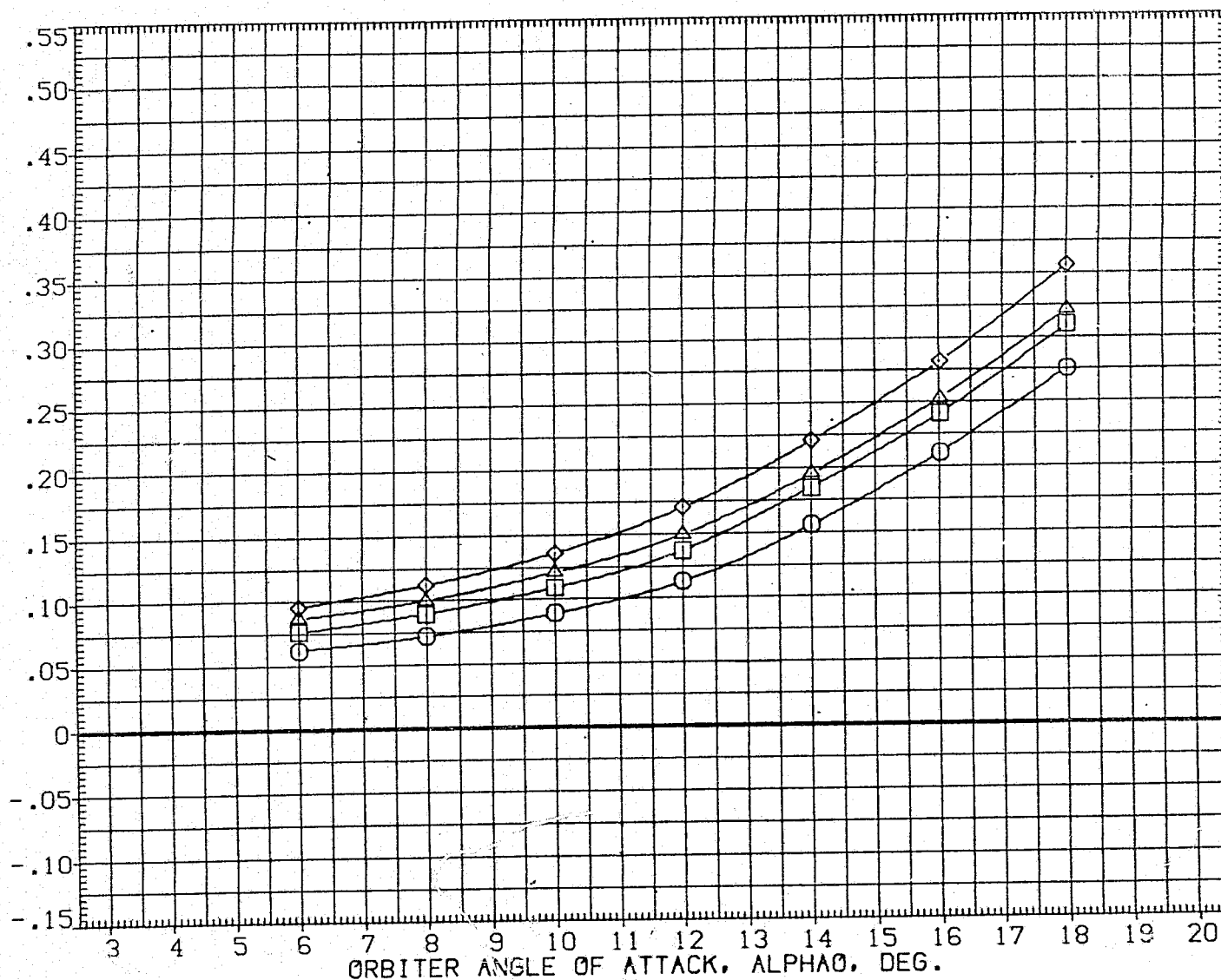


FIG 7 ORBITER ALONE ELEVON AND AILERON EFFECTS - 02
(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(NGN016)	□	CA20	02 S1
(NGN018)	□	CA20	02 S1
(NGN019)	◇	CA20	02 S1
(NGN017)	△	CA20	02 S1

	ELEVON	AILRON	BETA0
ORBITER DATA	.000	.000	.000
ORBITER DATA	5.000	.000	.000
ORBITER DATA	10.000	.000	.000
ORBITER DATA	5.000	-10.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

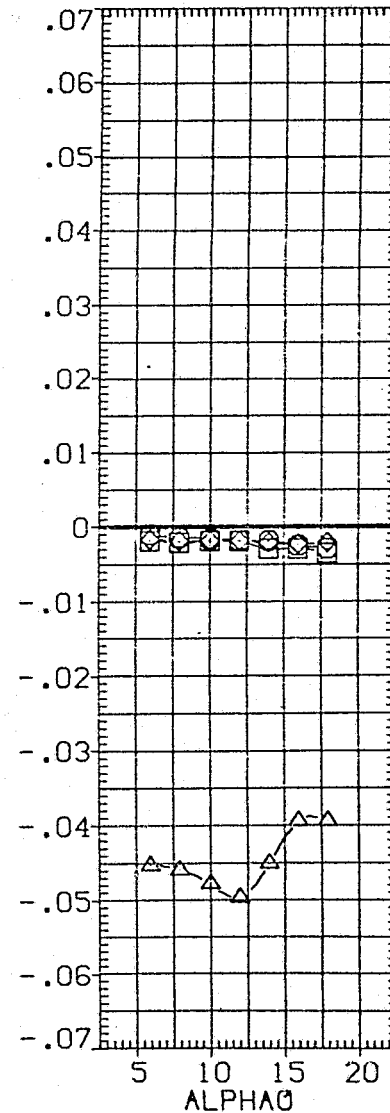
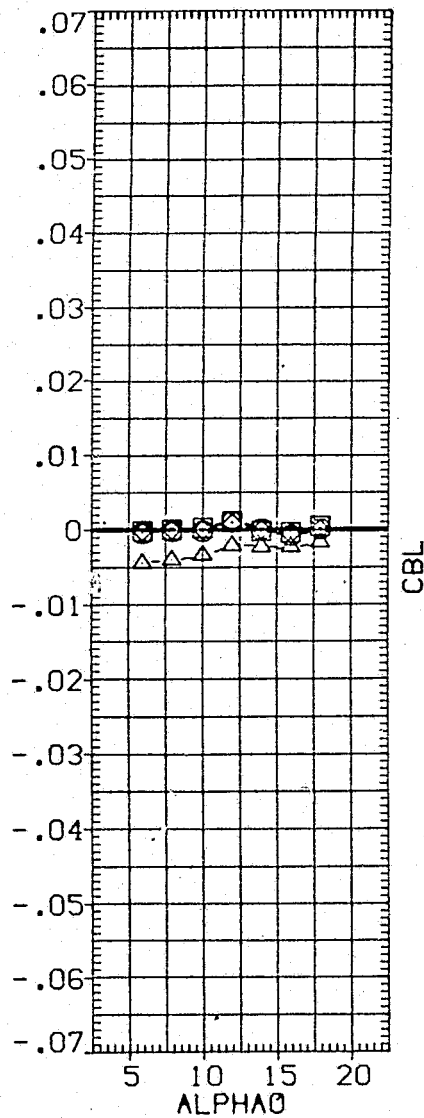
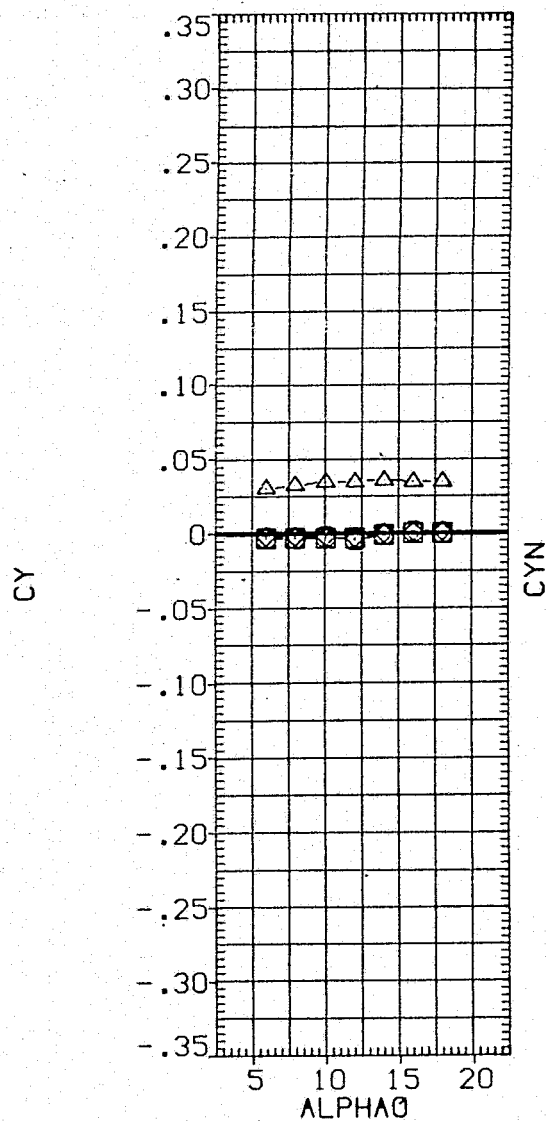


FIG 7 ORBITER ALONE ELEVON AND AILERON EFFECTS - 02
(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN012) ○	CA20 01 S1
(NGN013) □	CA20 01 S1

ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0	ALPHA0
5.000	.000	-5.000	10.000
5.000	.000	-5.000	14.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMHP	1109.0000	IN.X0
YMHP	.0000	IN.Y0
ZMHP	375.0000	IN.Z0
SCALE	.0300	

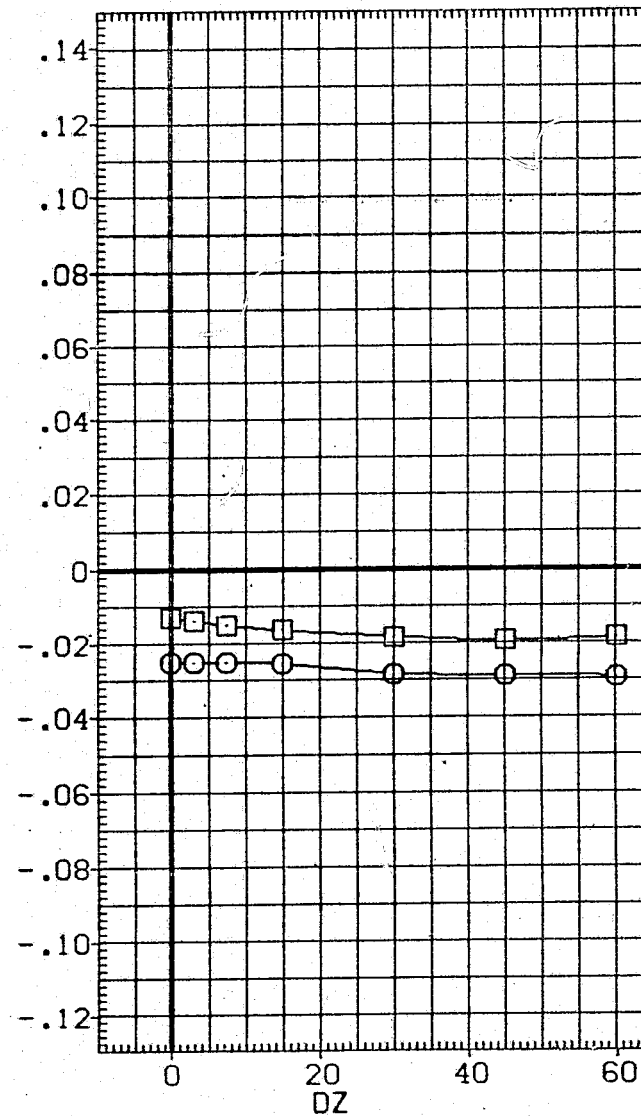
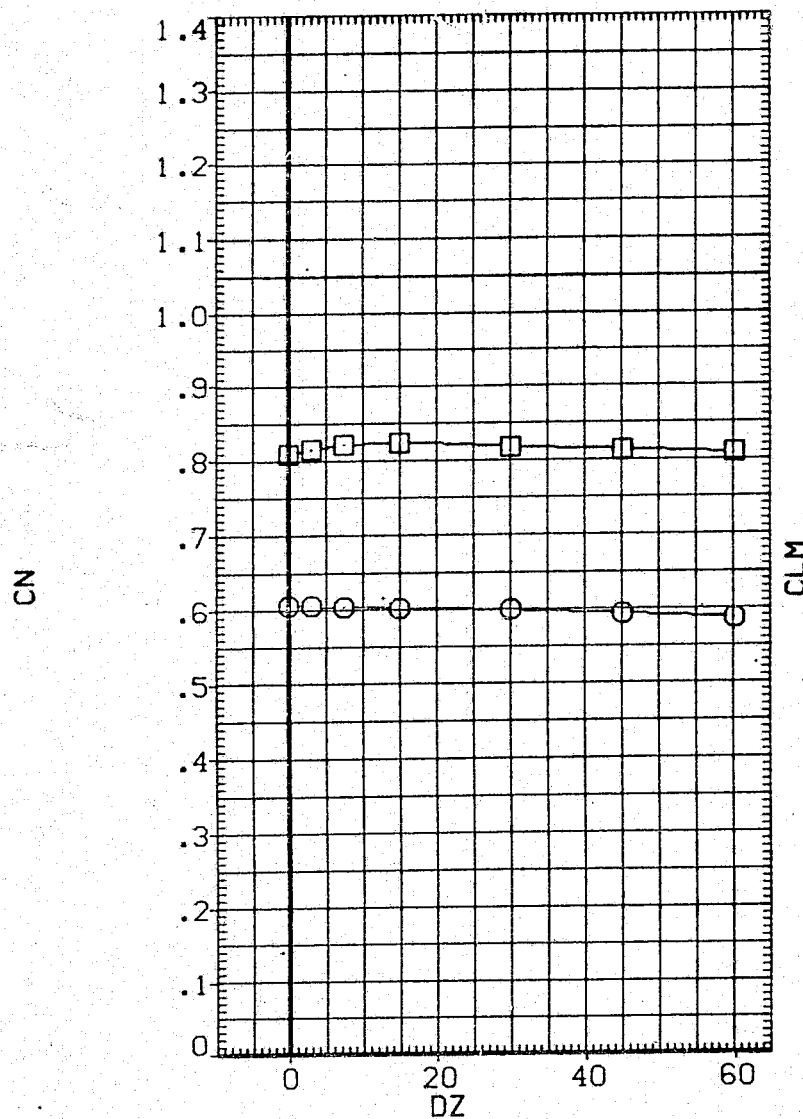


FIG 8 ORBITER ALONE DELTA Z VARIATIONS (TUNNEL ANOMALIES)

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN012)	CA20 01 S1
(NGN013)	CA20 01 S1

	ELEVON	AILRON	BETA0	ALPHA0
ORBITER DATA	5.000	.000	-5.000	10.000
ORBITER DATA	5.300	.000	-5.000	14.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

AXIAL FORCE COEFFICIENT, CA

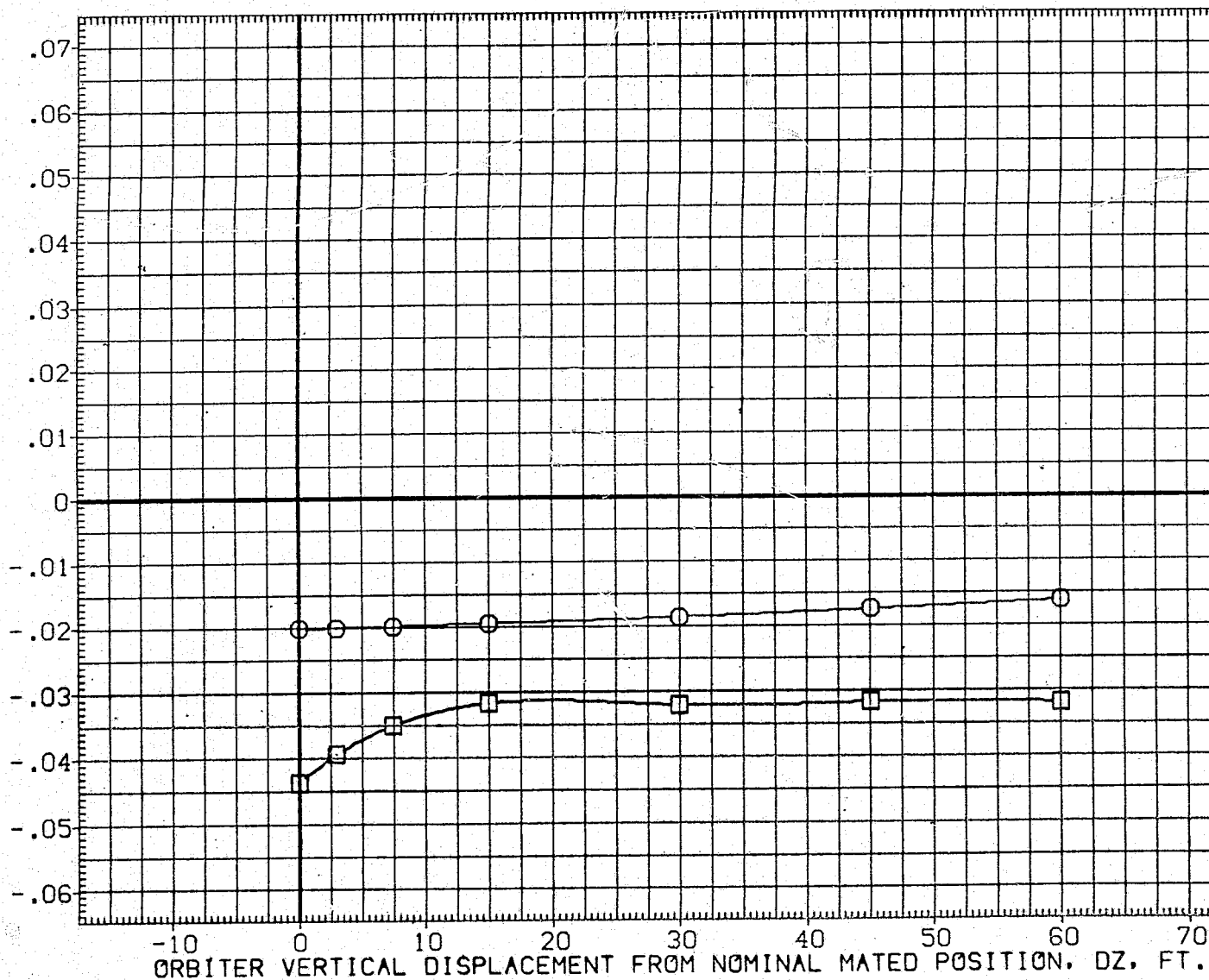


FIG 8 ORBITER ALONE DELTA Z VARIATIONS (TUNNEL ANOMALIES)

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN012) CA20 01 S1
 (NGN013) CA20 01 S1

ORBITER DATA
 ORBITER DATA

ELEVON 5.000
 AILRON .000
 BETA0 -5.000
 ALPHA0 10.000
 14.000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

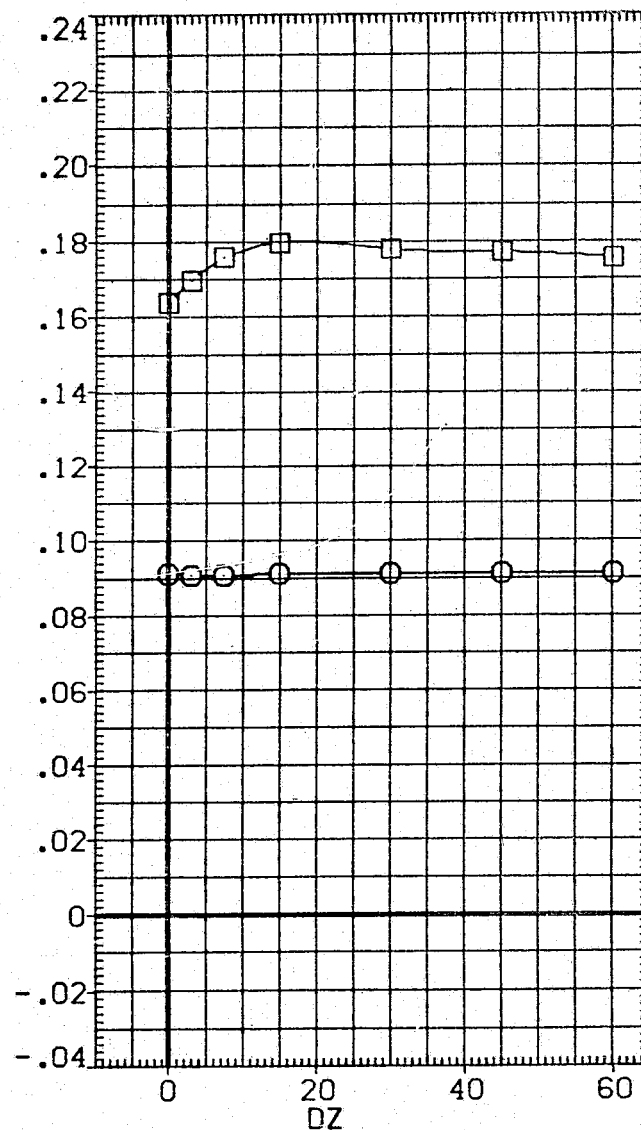
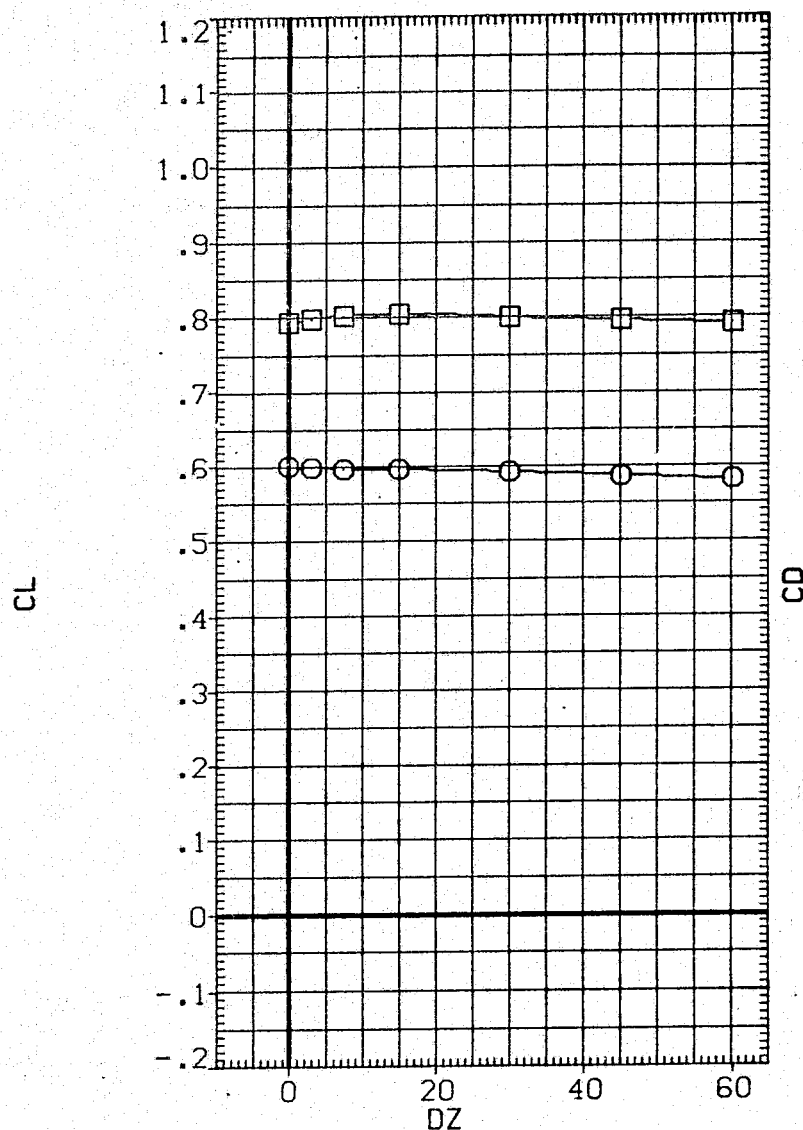




FIG 8 ORBITER ALONE DELTA Z VARIATIONS (TUNNEL ANOMALIES)

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN012)  CA20 01 S1
 (NGN013)  CA20 01 S1

ELEVON AILRON BETA0
 ORBITER DATA 5.000 .000 -5.000
 ORBITER DATA 5.000 .000 -5.000

ALPHA0
 10.000
 14.000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

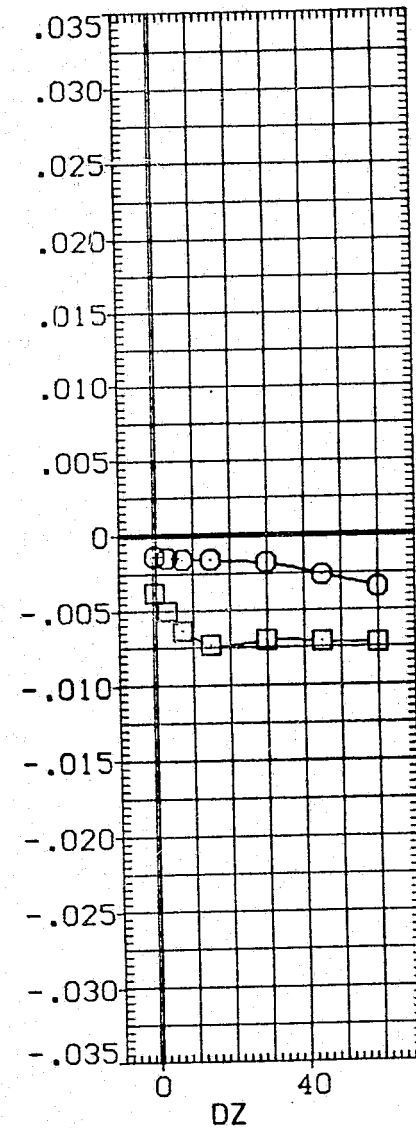
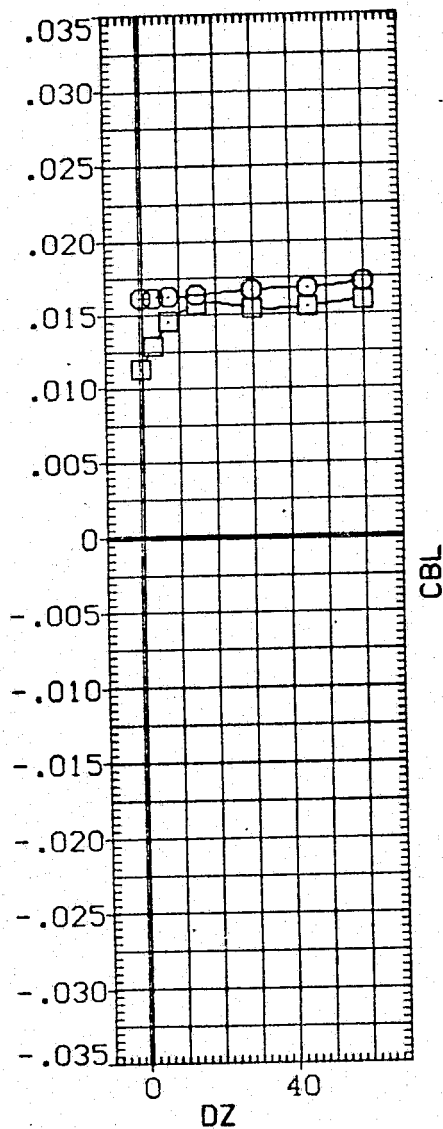
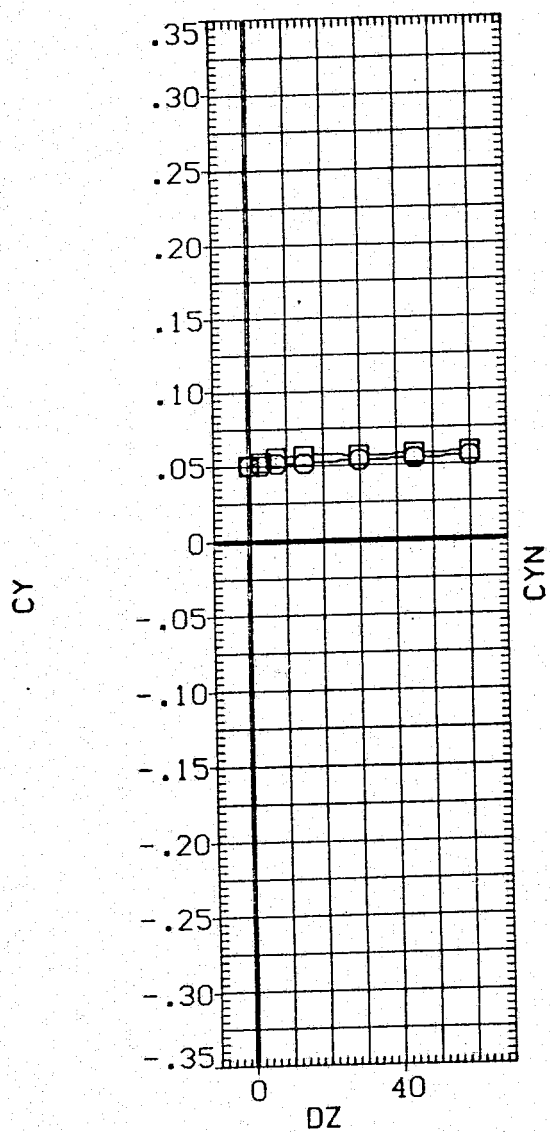


FIG 8 ORBITER ALONE DELTA Z VARIATIONS (TUNNEL ANOMALIES)
 (A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(NGN014) ○ CA20 01 S1

ORBITER DATA ELEVON AILRON ALPHA0 PHI
5.000 .000 7.500 -90.000

REFERENCE INFORMATION
SREF 2690.0000 50.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

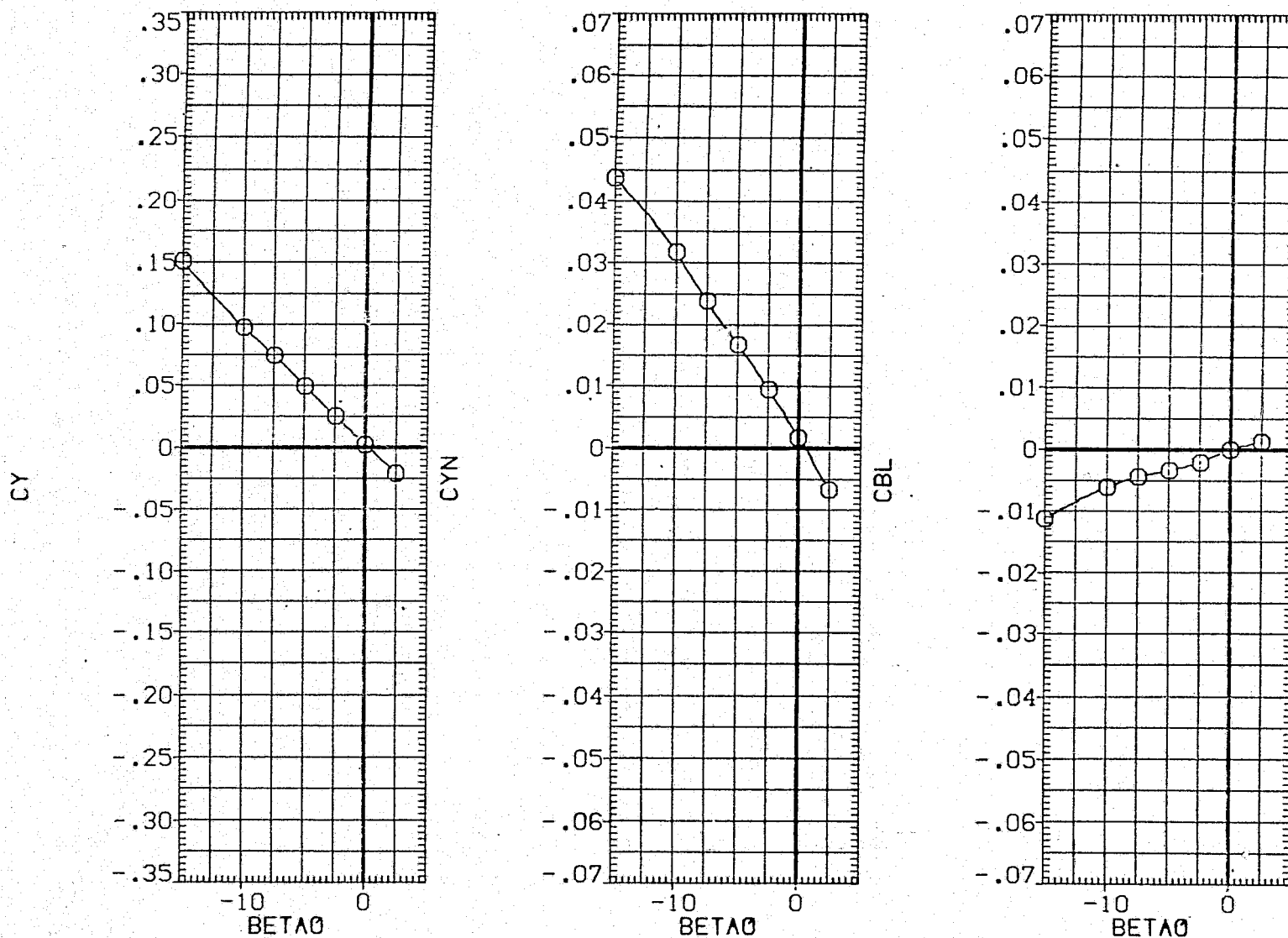




FIG 9 ORBITER ALONE SIDESLIP EFFECTS - 01 (BETA SWEEP)

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN007) 	CA20 01 S1
(NGN010) 	CA20 01 S1

	ELEVON	AILRON	BETA0
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XM RP	1109.0000	IN.X0
YM RP	.0000	IN.Y0
ZM RP	375.0000	IN.Z0
SCALE	.0300	

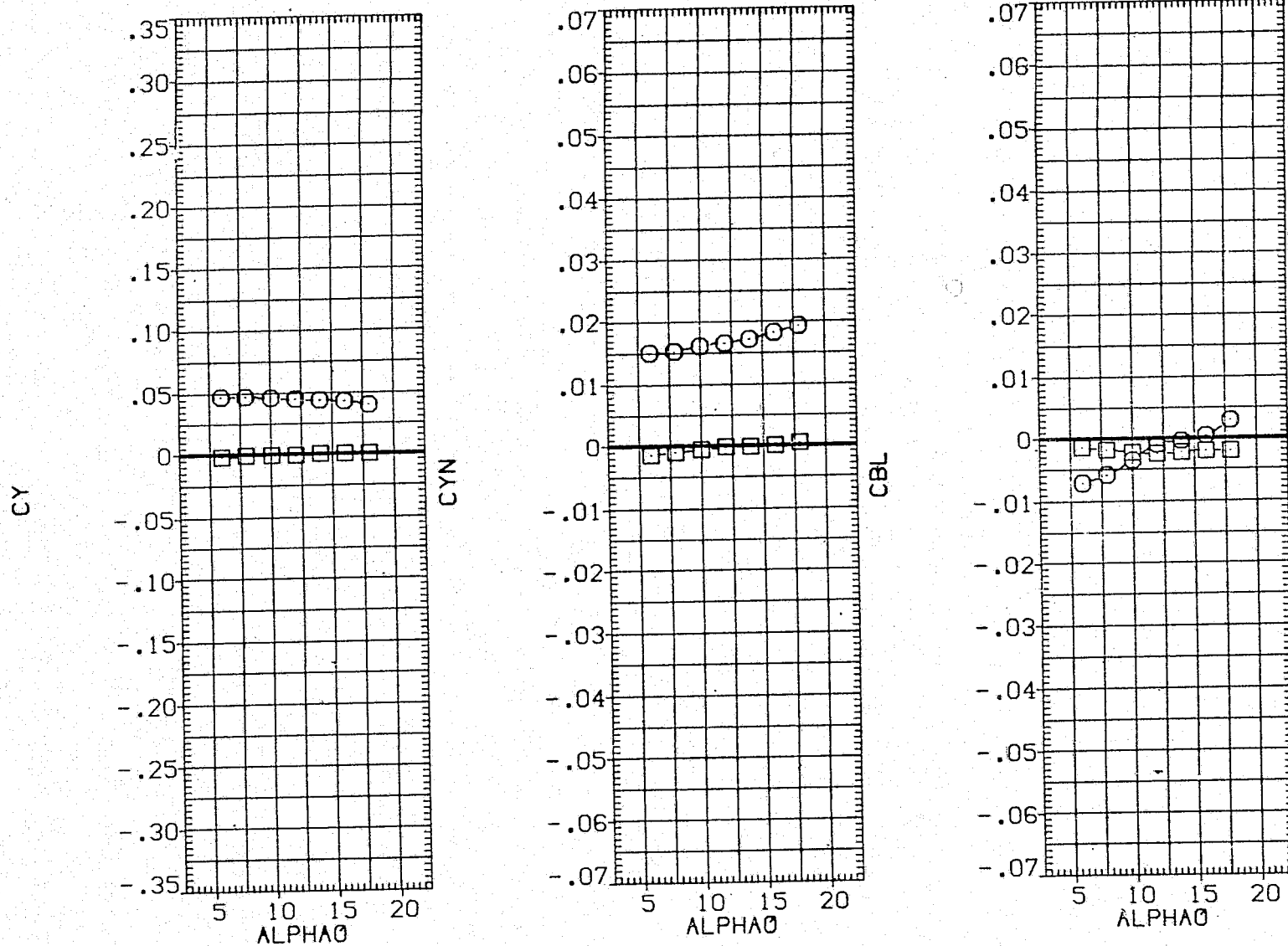


FIG 10 ORBITER ALONE SIDESLIP EFFECTS - 01 (ALPHA SWEEP)
 (A) MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN007)	CA20 01 S1
(NGN010)	CA20 01 S1

	ELEVON	AILRON	BETA0
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	.000

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XMRP	1109.0000 IN.X0
YMRP	.0000 IN.Y0
ZMRP	375.0000 IN.Z0
SCALE	.0300

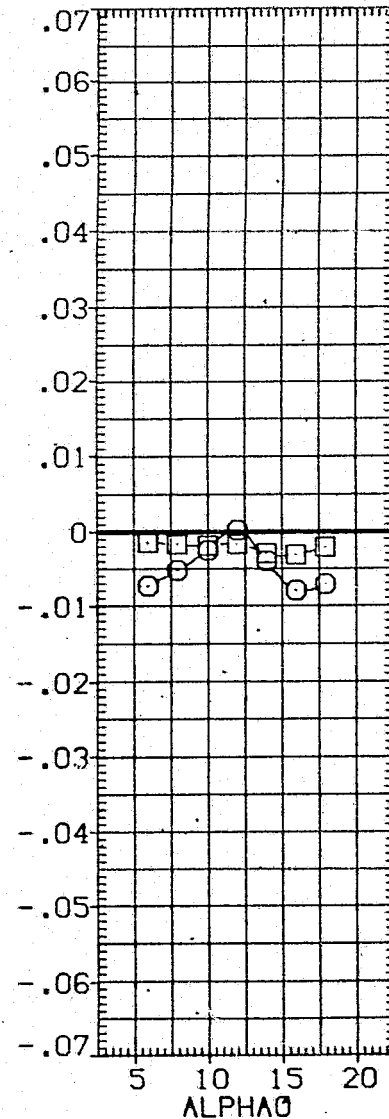
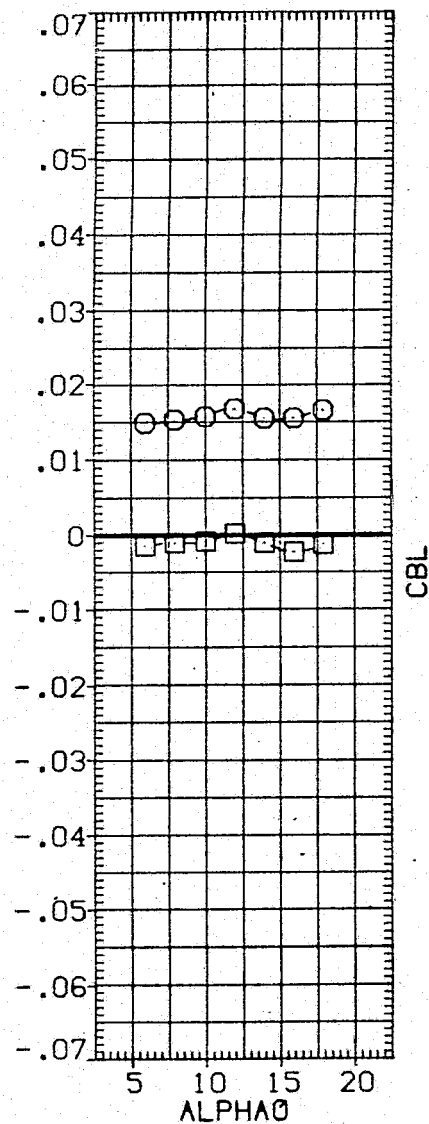
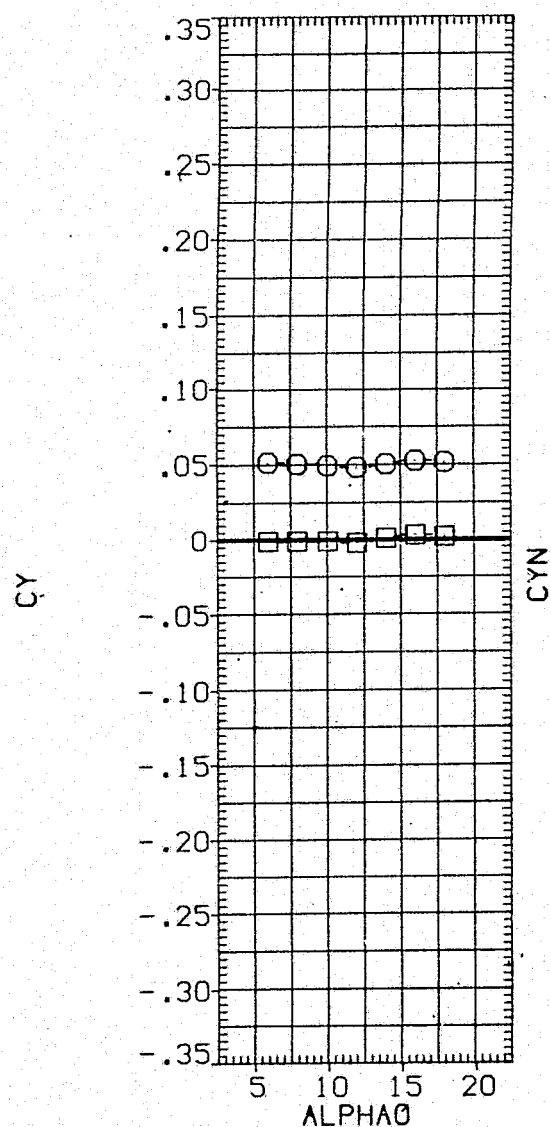


FIG 10 ORBITER ALONE SIDESLIP EFFECTS - 01 (ALPHA SWEEP)
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN015) ○	CA20 02 S1
(NGN018) □	CA20 02 S1

	ELEVON	AILRON	BETA0
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

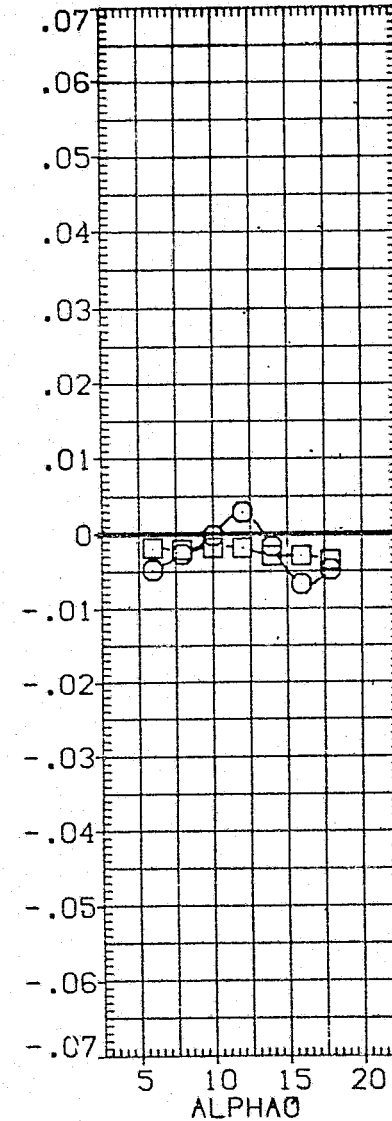
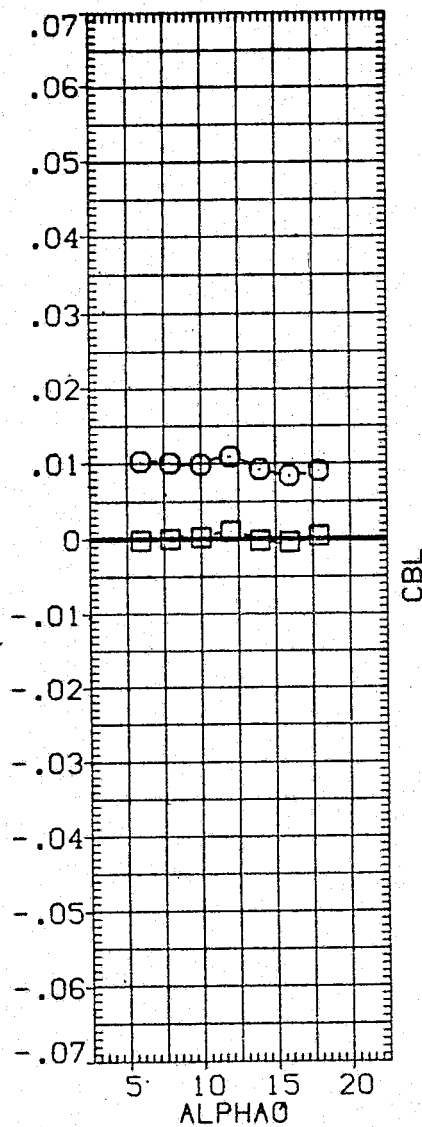
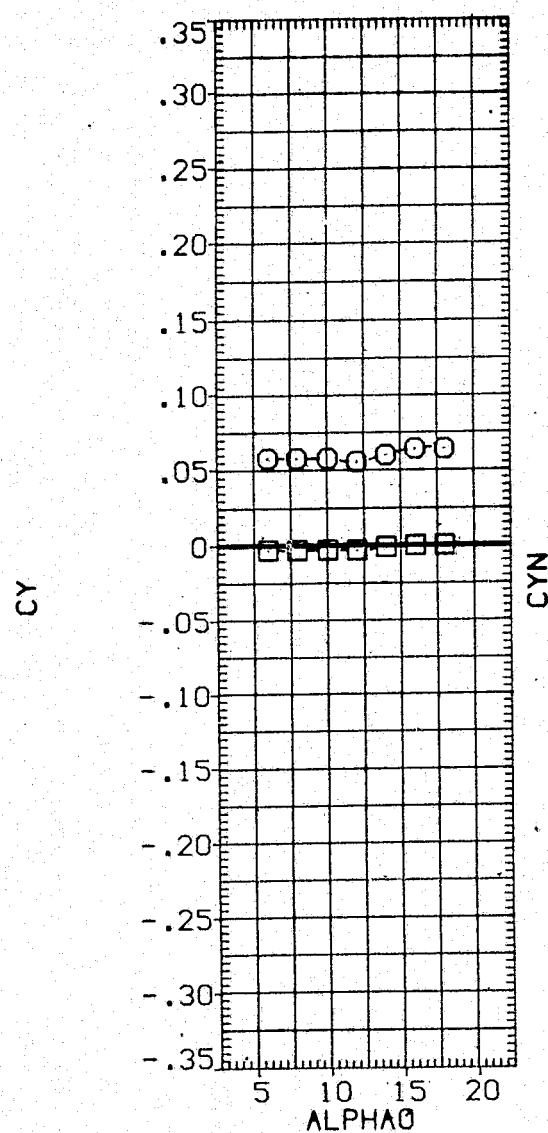


FIG 11 ORBITER ALONE SIDESLIP EFFECTS - 02 (ALPHA SWEEP)
 (A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN024)	CA20 05 S2
(NGN025)	CA20 05 S2

	ELEVON	AILRON	BETA0
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

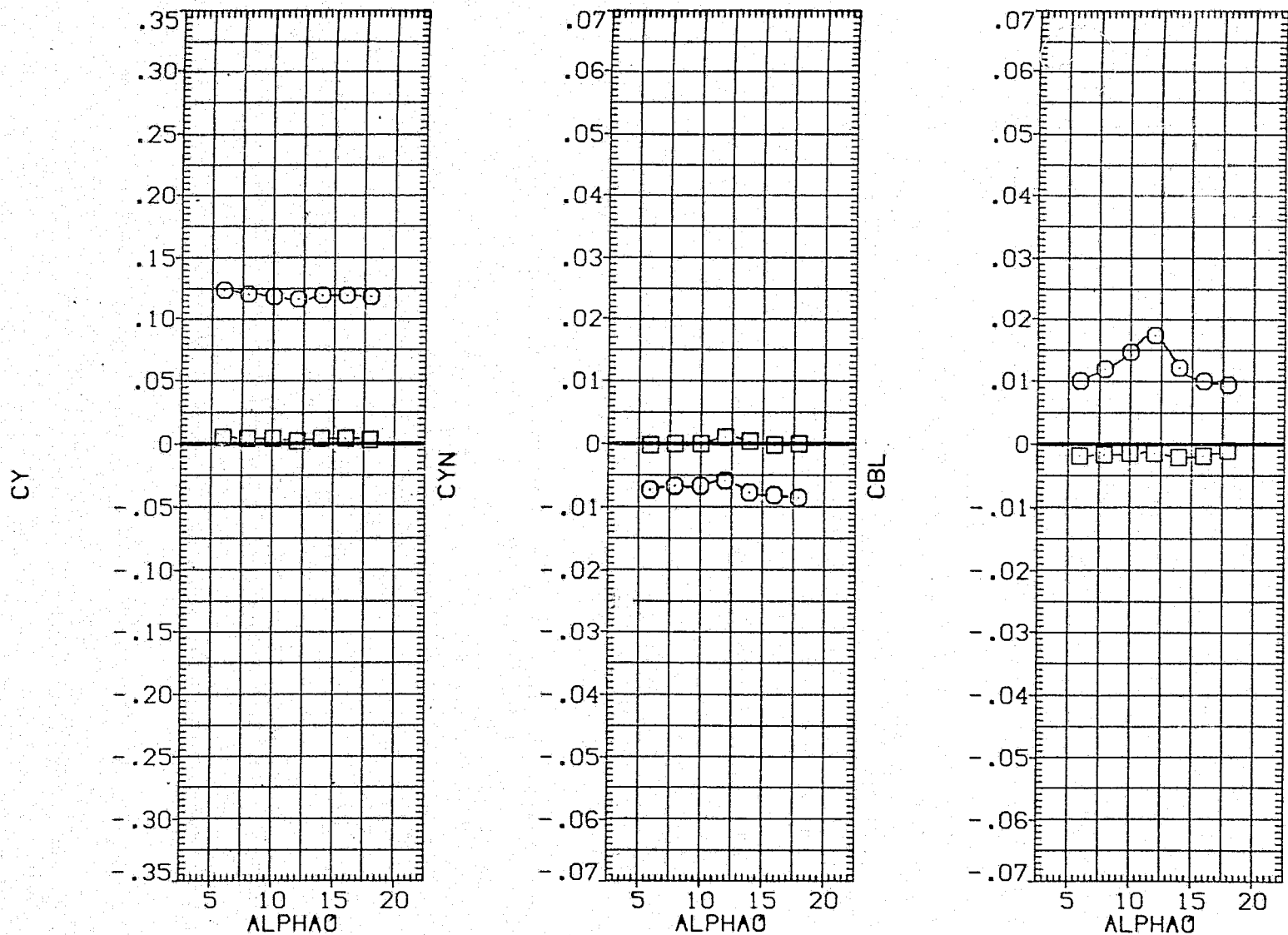


FIG 12 ORBITER ALONE SIDESLIP EFFECTS - 05 (ALPHA SWEEP)
(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN007)	CA20 01 S1
(NGN015)	DATA NOT AVAILABLE
(NGN020)	CA20 03 S2
(NGN024)	DATA NOT AVAILABLE
(NGN033)	DATA NOT AVAILABLE

ORBITER DATA
ORBITER DATA

ELEVON	AIRON	BETA0
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

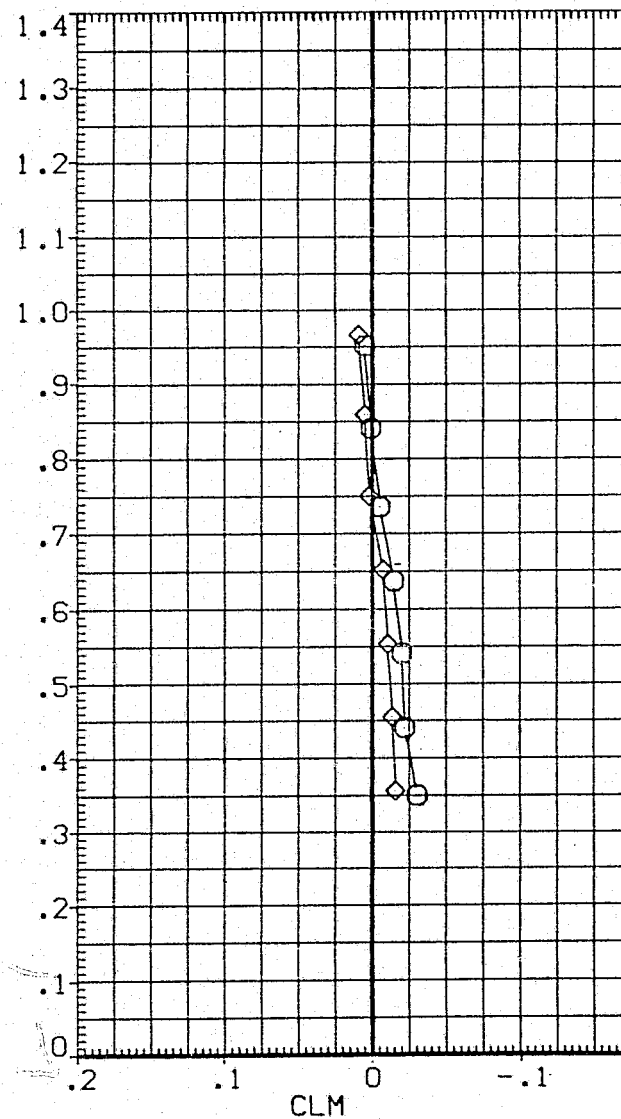
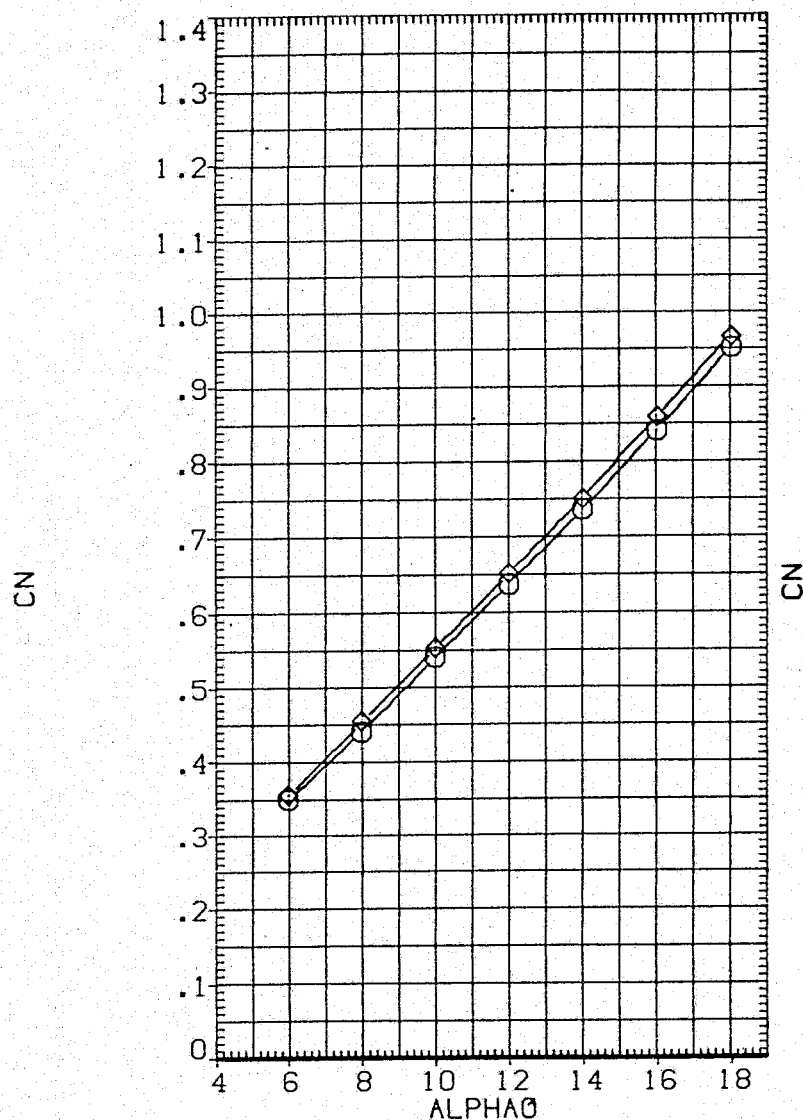


FIG 13 ORBITER ALONE CONFIGURATION EFFECTS
(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN007)	CA20 01 S1
(NGN015)	CA20 02 S1
(NGN020)	CA20 03 S2
(NGN024)	CA20 05 S2
(NGN033)	CA20 09 S2

ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

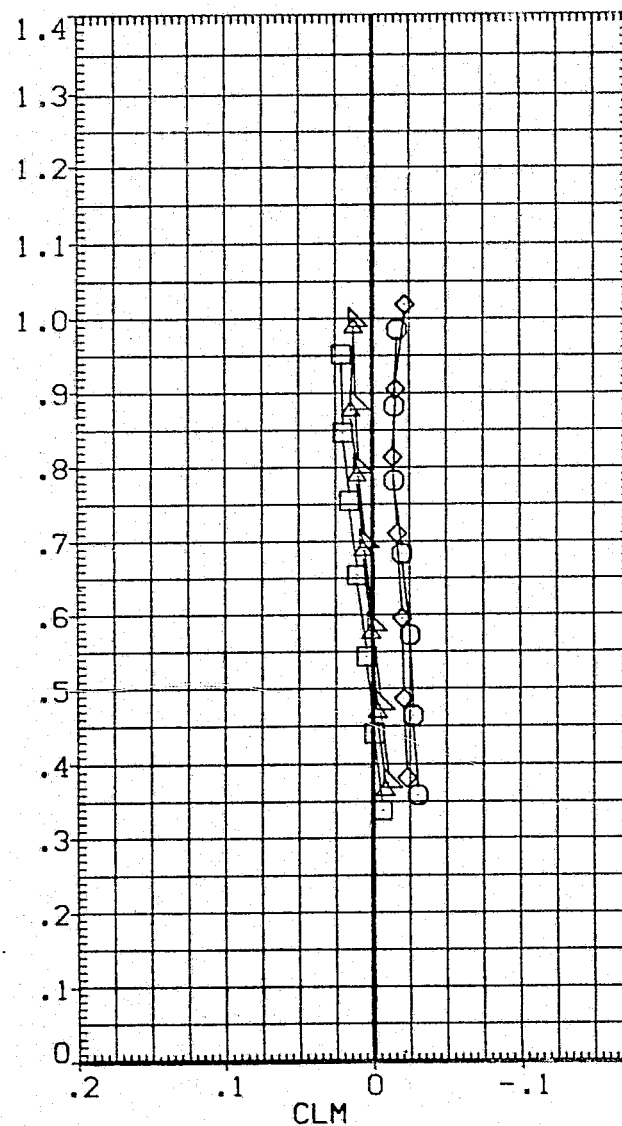
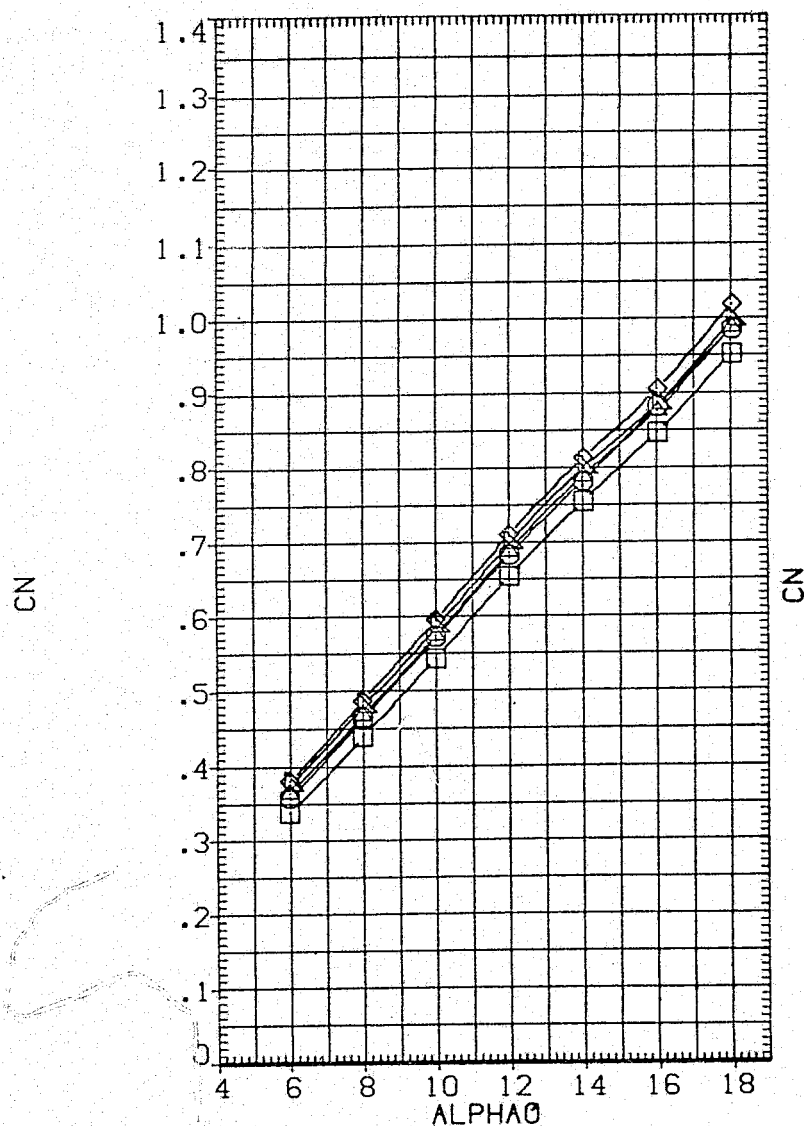


FIG 13 ORBITER ALONE CONFIGURATION EFFECTS
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN007)	CA20 01 S1
(NGN015)	DATA NOT AVAILABLE
(NGN020)	CA20 03 S2
(NGN024)	DATA NOT AVAILABLE
(NGN033)	DATA NOT AVAILABLE

ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XM RP	1109.0000	IN.X0
YM RP	.0000	IN.Y0
ZM RP	375.0000	IN.Z0
SCALE	.0300	

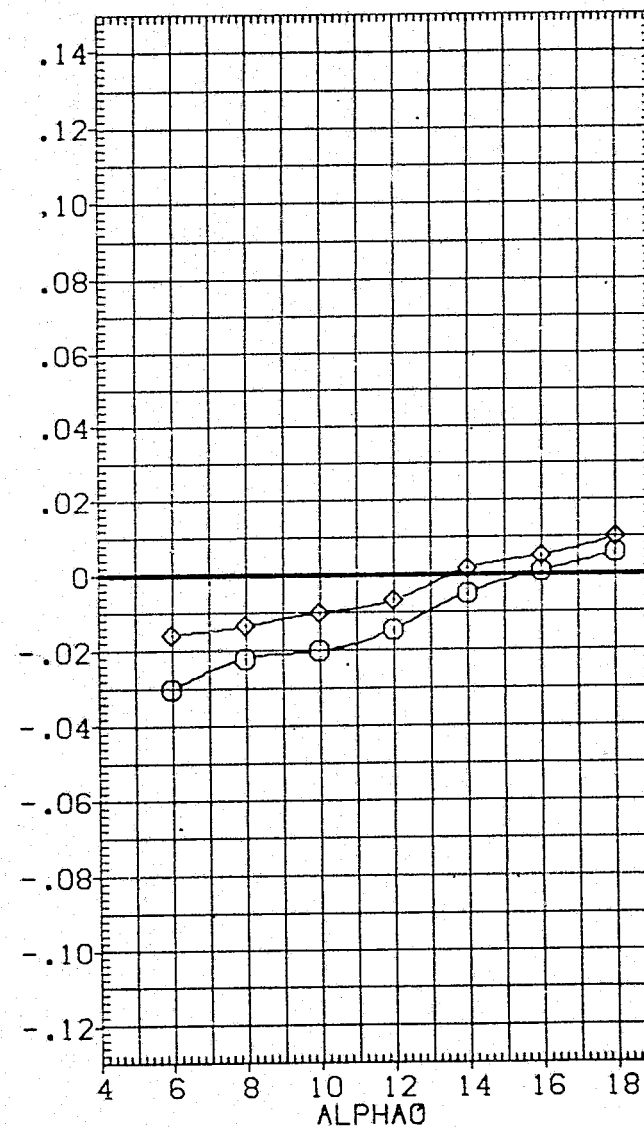
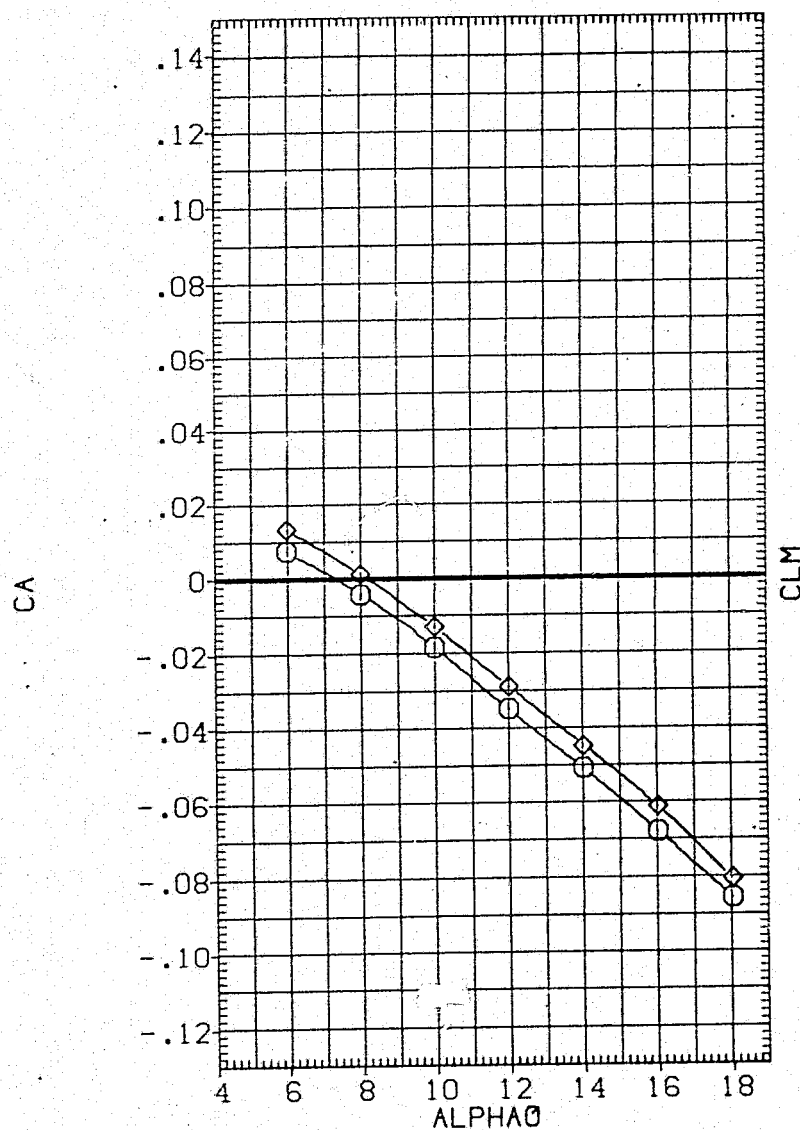


FIG 13 ORBITER ALONE CONFIGURATION EFFECTS
(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN007)	CA20 01 S1
(NGN015)	CA20 02 S1
(NGN020)	CA20 03 S2
(NGN024)	CA20 05 S2
(NGN033)	CA20 09 S2

ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

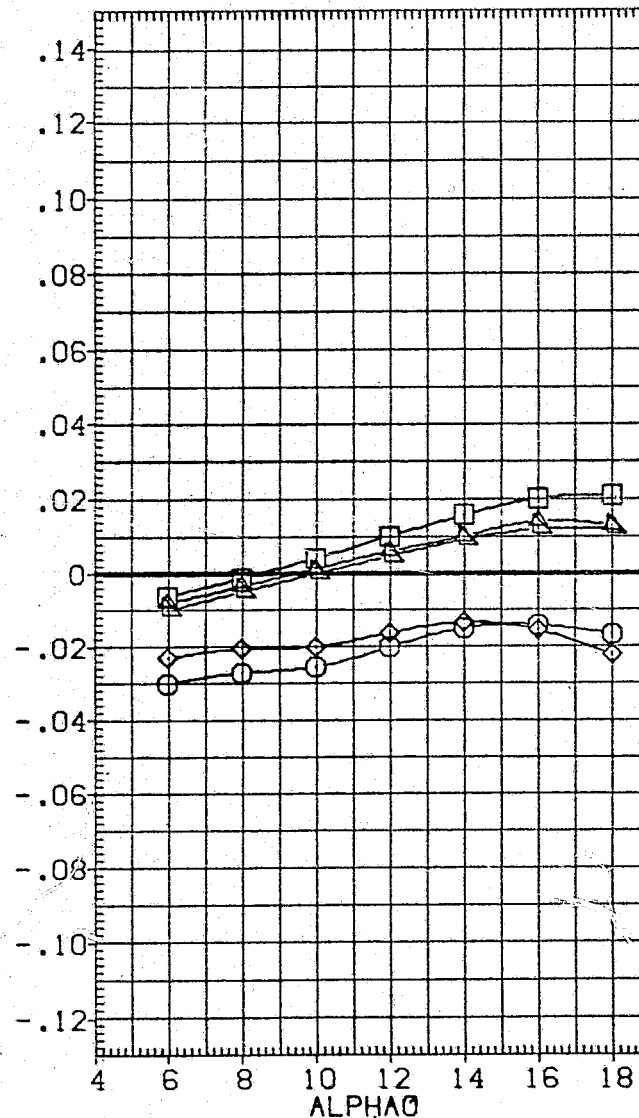
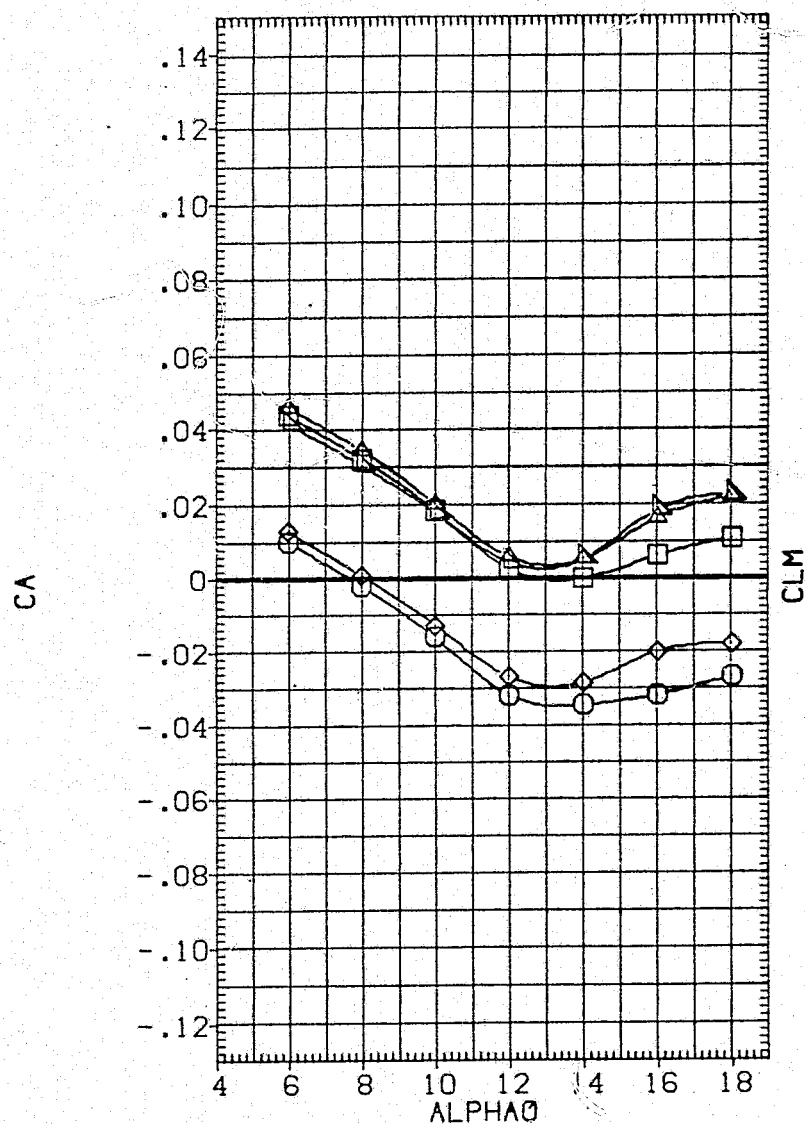


FIG 13 ORBITER ALONE CONFIGURATION EFFECTS
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN007)	CA20 01 S1
(NGN015)	DATA NOT AVAILABLE
(NGN020)	CA20 03 S2
(NGN024)	DATA NOT AVAILABLE
(NGN033)	DATA NOT AVAILABLE

ORBITER DATA

ORBITER DATA

ELEVON	AILPON	BETA0
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

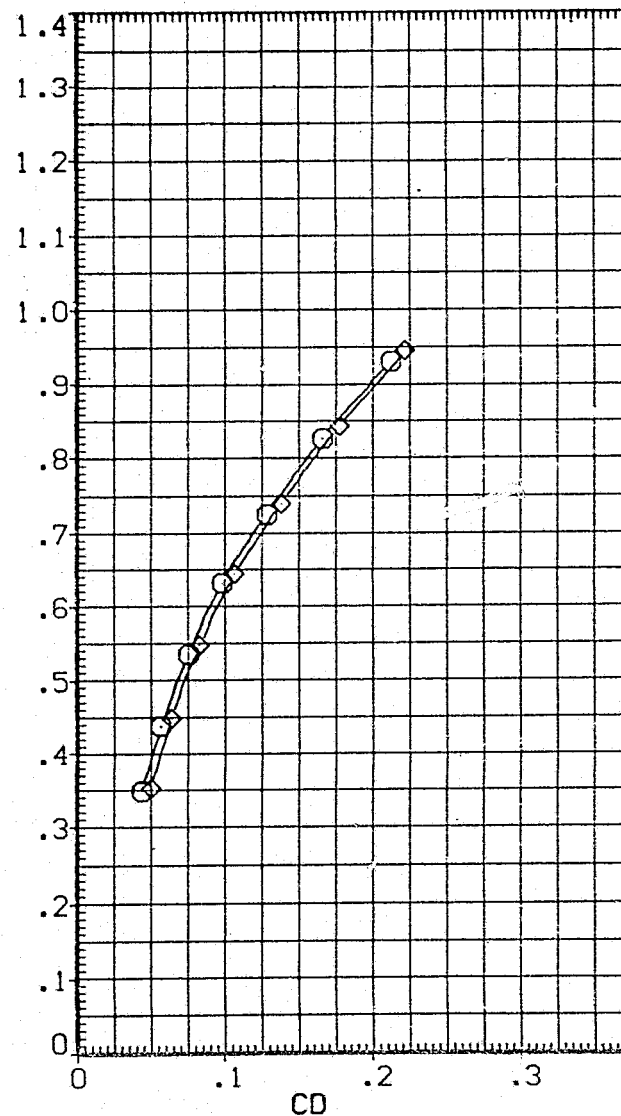
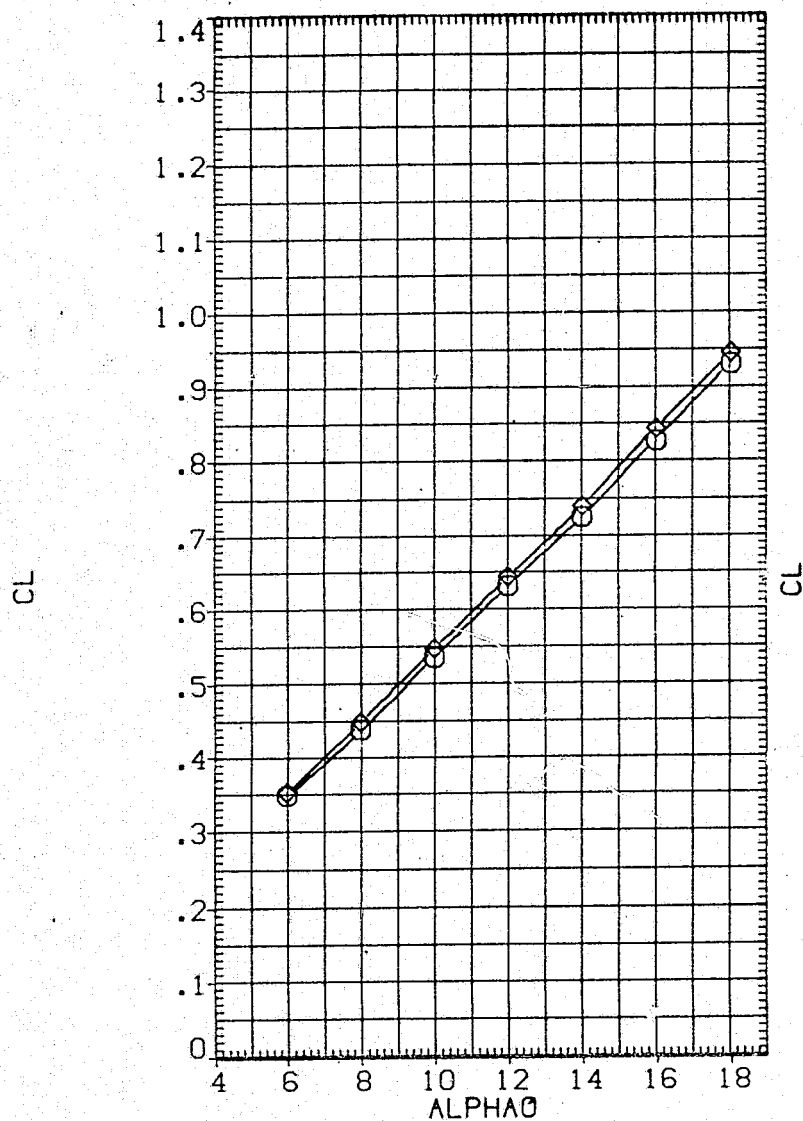


FIG 13 ORBITER ALONE CONFIGURATION EFFECTS
(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN007)	CA20 01 S1
(NGN015)	CA20 02 S1
(NGN020)	CA20 03 S2
(NGN024)	CA20 05 S2
(NGN033)	CA20 09 S2

ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000
5.000	.000	-5.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	3300	

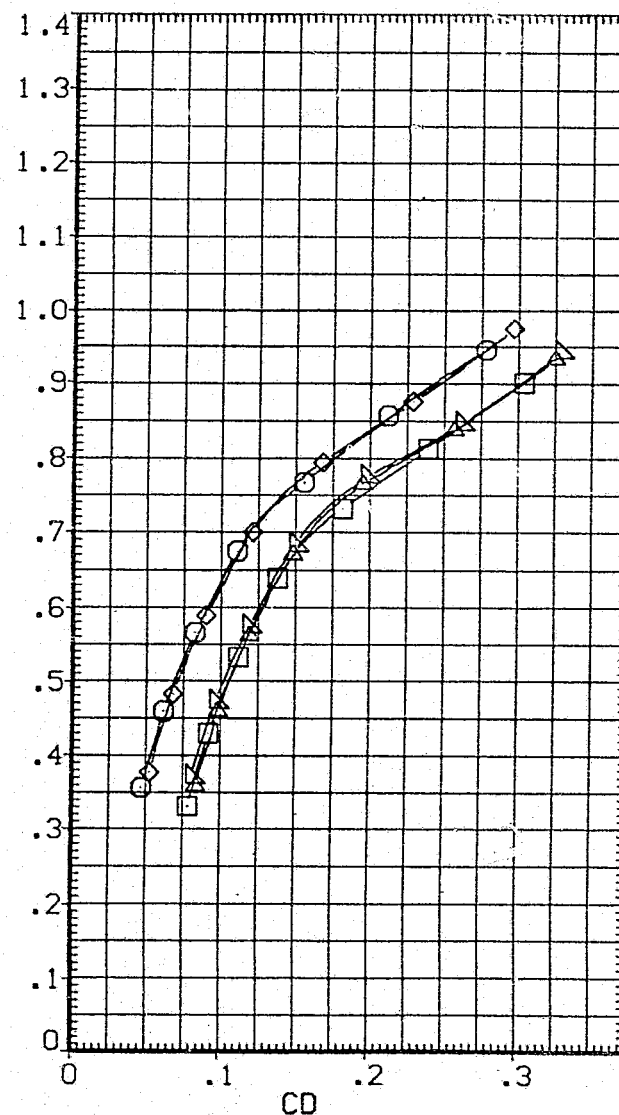
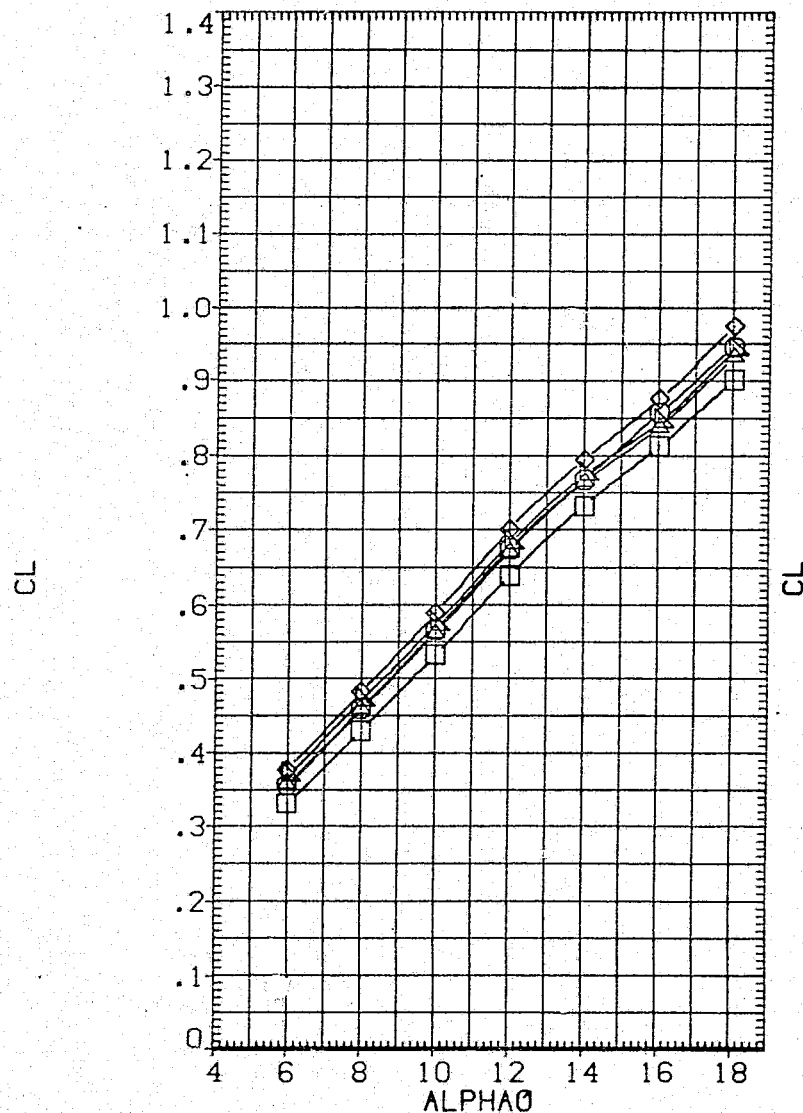


FIG 13 ORBITER ALONE CONFIGURATION EFFECTS
(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION
(NGN007)	○	CA20 01 S1
(NGN015)	□	DATA NOT AVAILABLE
(NGN020)	◇	CA20 03 S2
(NGN024)	△	DATA NOT AVAILABLE
(NGN033)	▽	DATA NOT AVAILABLE

	ELEVON	AILRON	BETA0
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	-5.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

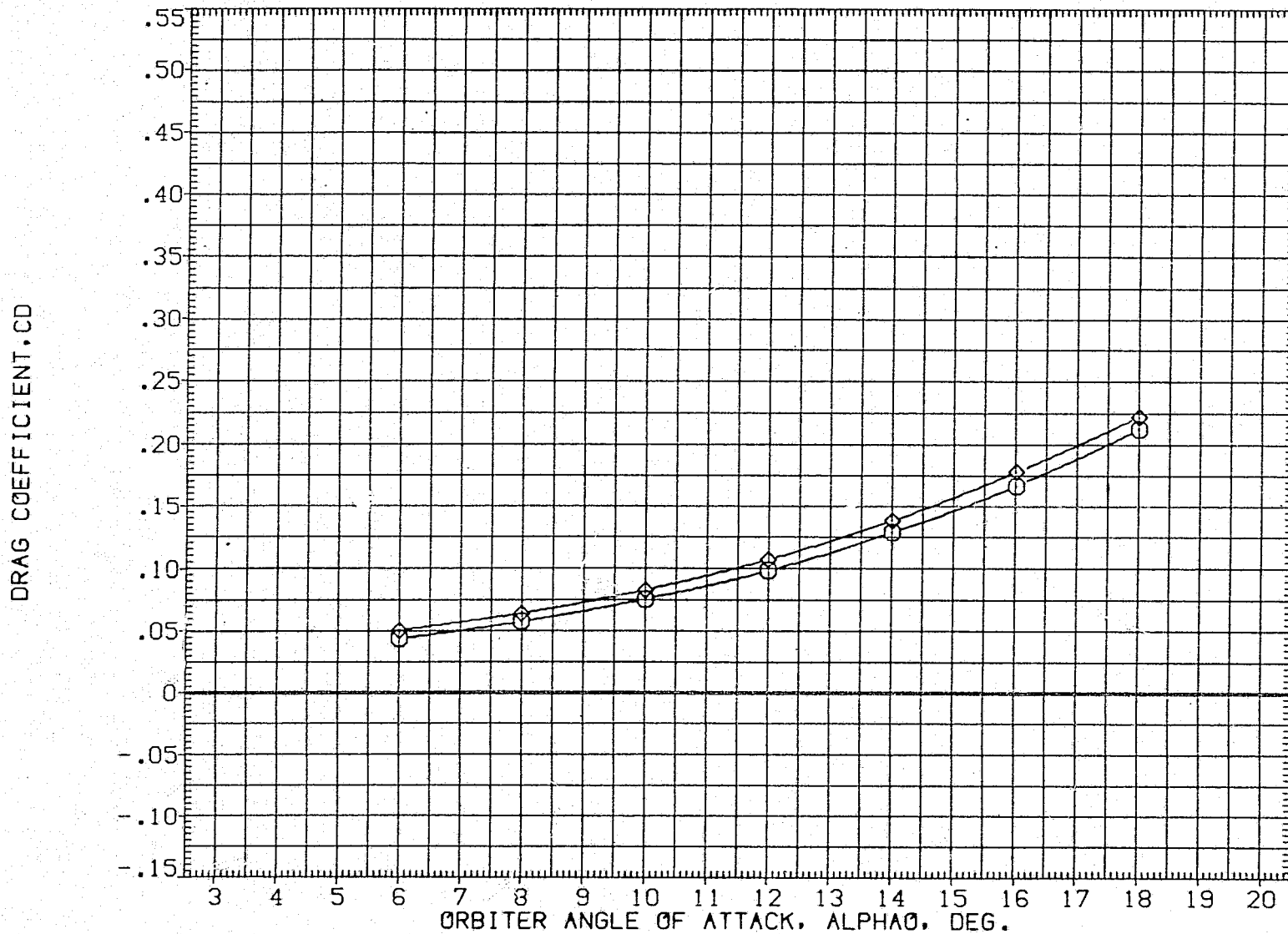


FIG 13 ORBITER ALONE CONFIGURATION EFFECTS

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN007)	CA20 01 S1
(NGN015)	CA20 02 S1
(NGN020)	CA20 03 S2
(NGN024)	CA20 05 S2
(NGN033)	CA20 09 S2

ORBITER DATA	ELEVON	AILRON	BETA0
5.000	.000	-5.000	
5.000	.000	-5.000	
5.000	.000	-5.000	
5.000	.000	-5.000	
5.000	.000	-5.000	

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

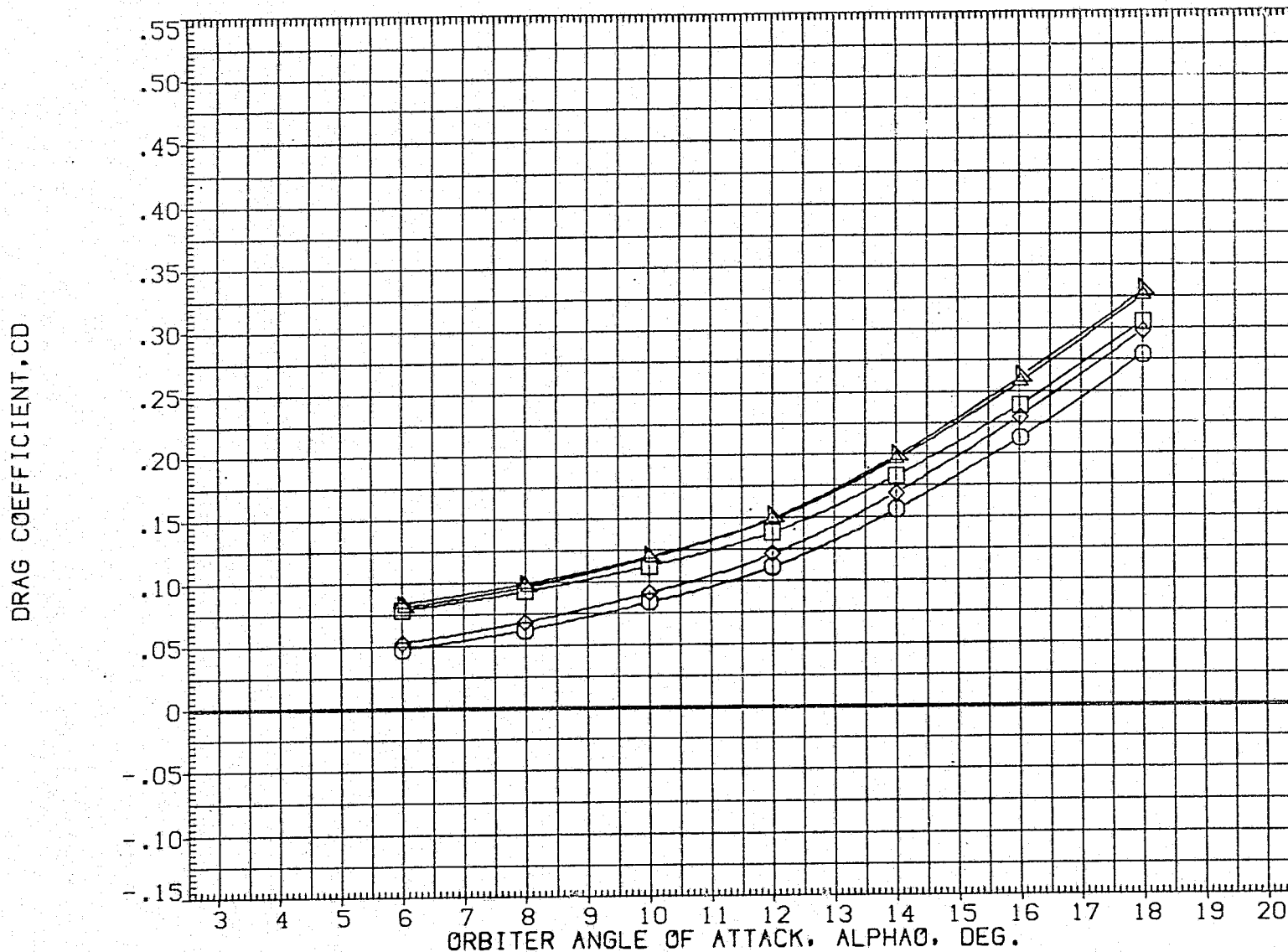


FIG 13 ORBITER ALONE CONFIGURATION EFFECTS
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGND07)	CA20 01 S1
(NGND15)	DATA NOT AVAILABLE
(NGND20)	CA20 03 S2
(NGND24)	DATA NOT AVAILABLE
(NGND33)	DATA NOT AVAILABLE

	ELEVON	AILRON	BETA0
ORBITER DATA	5.000	.000	-5.000
	5.000	.000	-5.000
ORBITER DATA	5.000	.000	-5.000
	5.000	.000	-5.000
	5.000	.000	-5.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

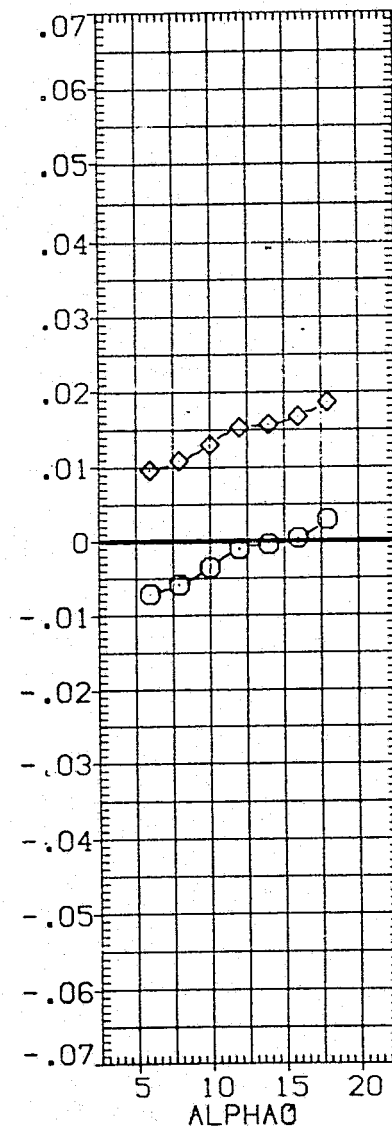
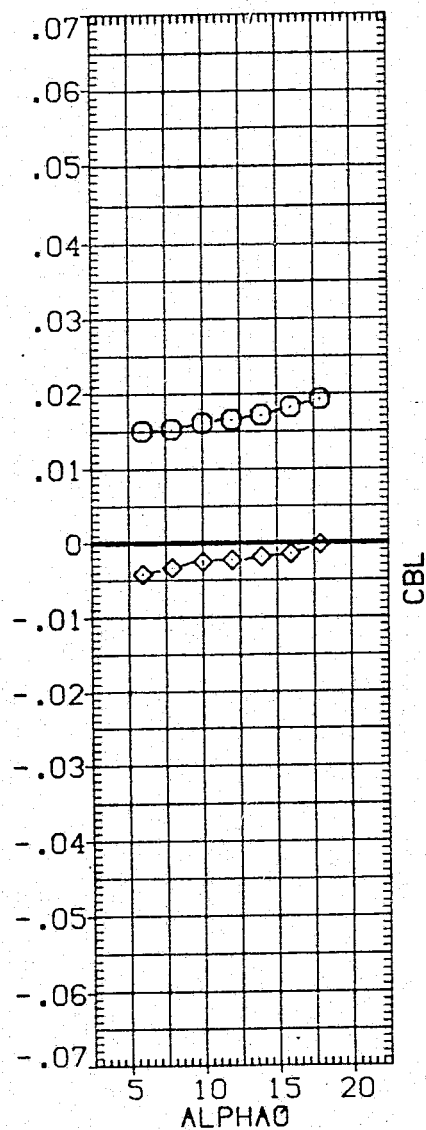
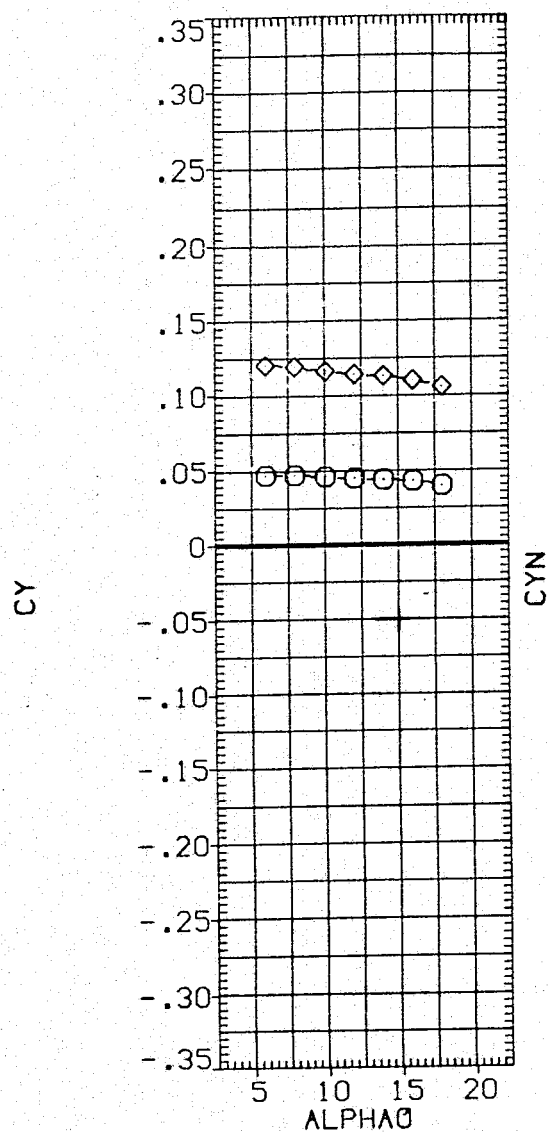


FIG 13 ORBITER ALONE CONFIGURATION EFFECTS
(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	
(NGN007)	CA20	01 S1
(NGN015)	CA20	02 S1
(NGN020)	CA20	03 S2
(NGN024)	CA20	05 S2
(NGN033)	CA20	09 S2

	ELEVON	AILRON	BETA0
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	-5.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

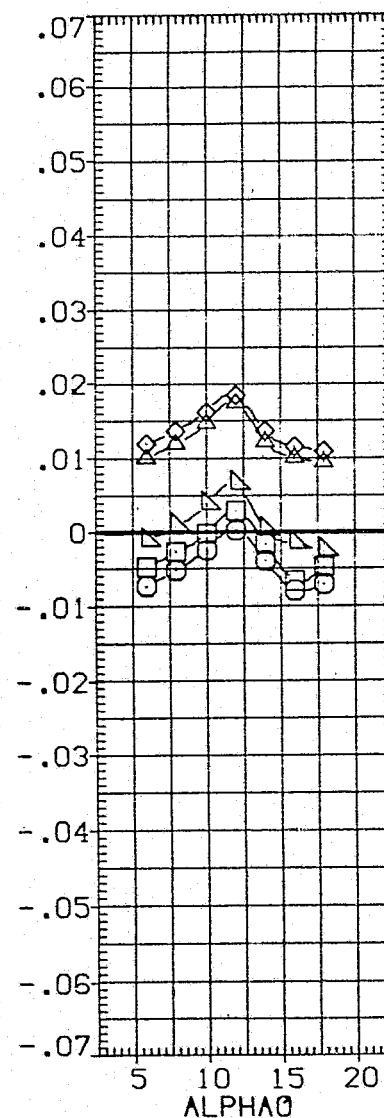
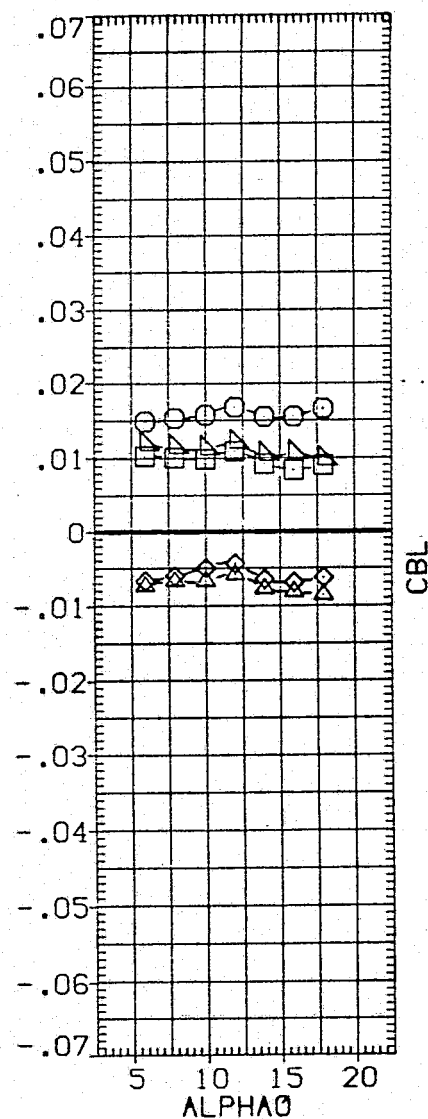
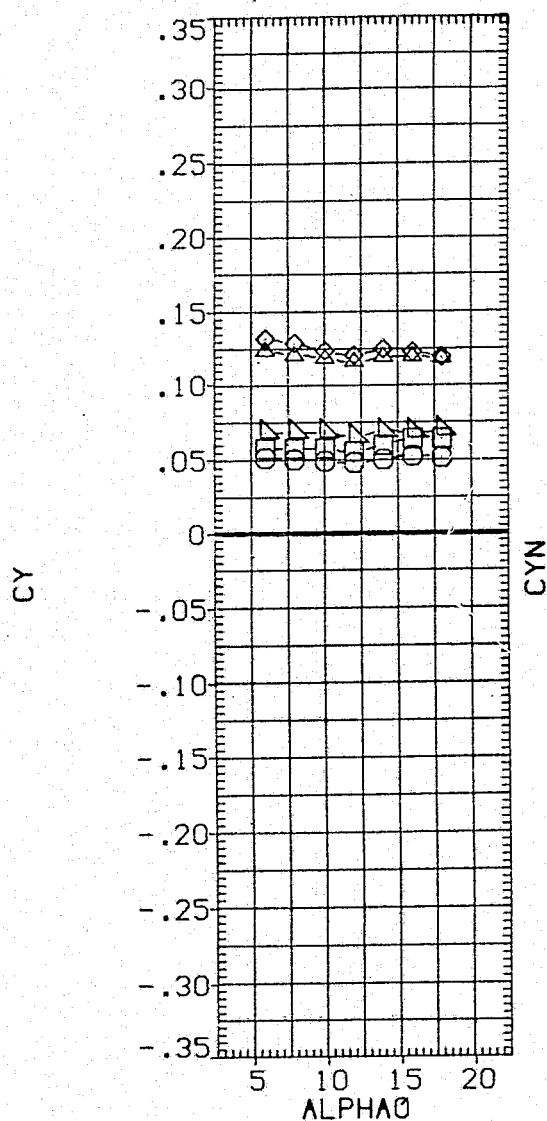


FIG 13 ORBITER ALONE CONFIGURATION EFFECTS
(B)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(NGN020) CA20 03 S2

(NGN023) DATA NOT AVAILABLE

(NGN025) DATA NOT AVAILABLE

(NGN026) DATA NOT AVAILABLE

ORBITER DATA

ELEVON	AILRON	BETA0	RUDDER	REFERENCE INFORMATION		
5.000	.000	-5.000	.000	SREF	2690.0000	SQ.FT.
5.000	.000	.000	15.000	LREF	474.8100	IN.
5.000	.000	.000	.000	BREF	936.6800	IN.
5.000	.000	.000	15.000	XMRP	1109.0000	IN.X0
				YMRP	.0000	IN.Y0
				ZMRP	375.0000	IN.Z0
				SCALE	.0300	

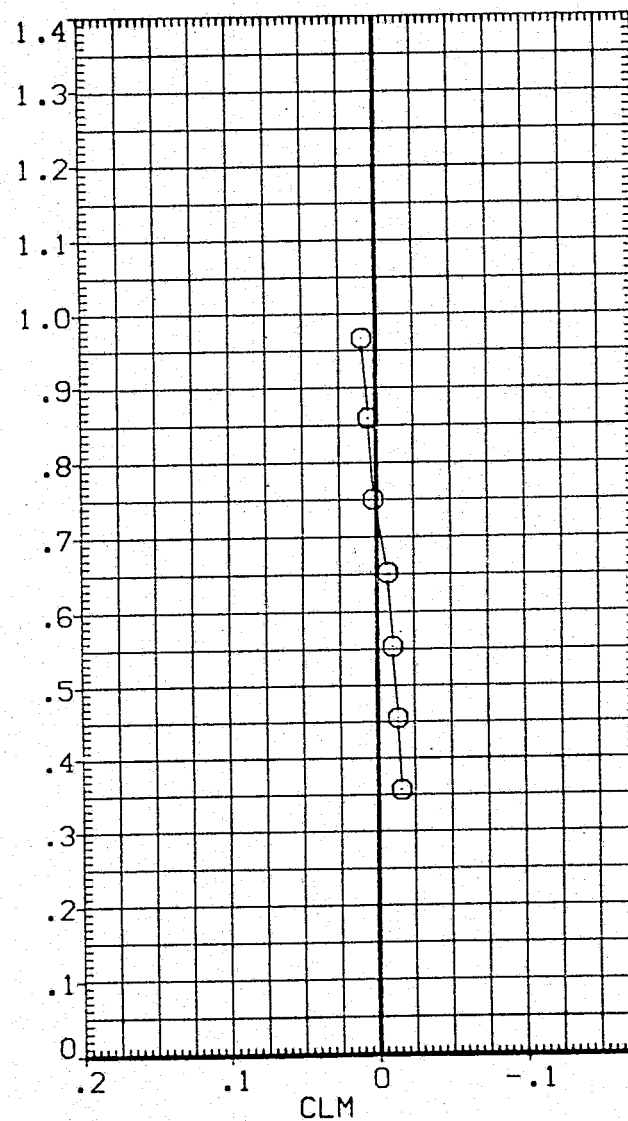
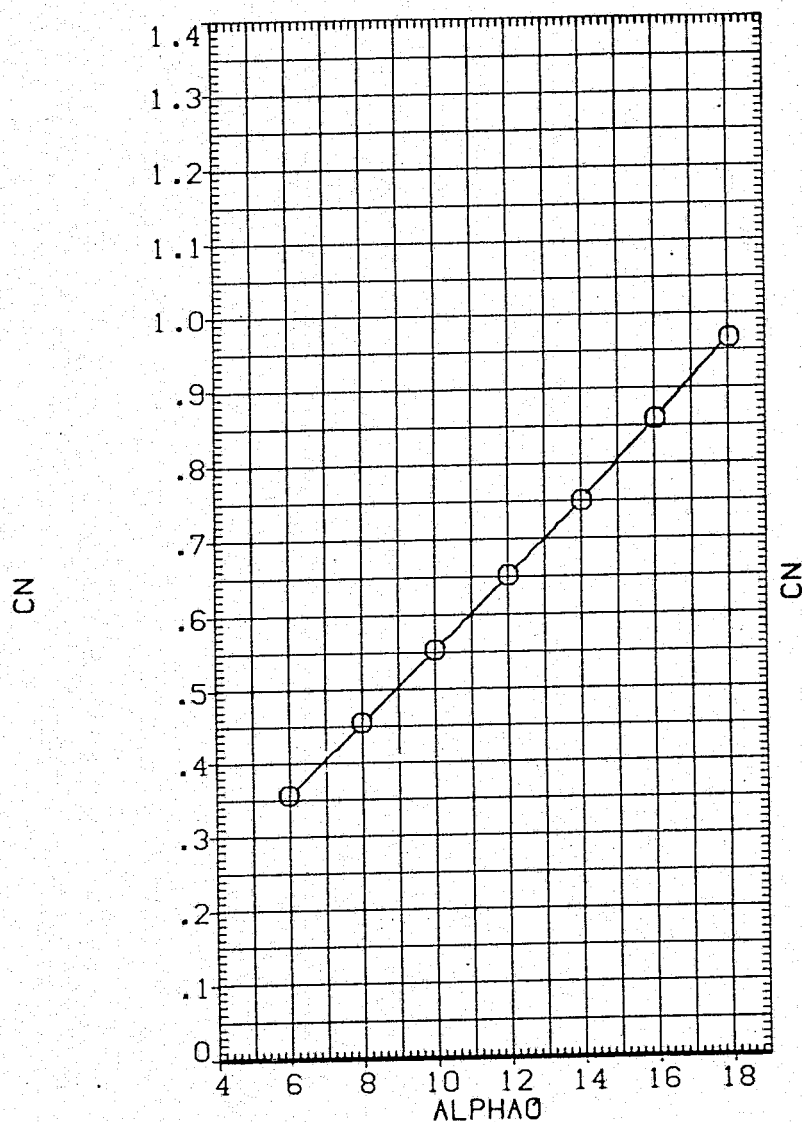


FIG 14 ORBITER ALONE RUDDER EFFECTS

(A)MACH = .30

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(NGN020) CA20 03 S2
 (NGN023) CA20 03 S2
 (NGN025) CA20 05 S2
 (NGN026) CA20 05 S2

ORBITER DATA
 ORBITER DATA
 ORBITER DATA
 ORBITER DATA

ELEVON
 5.000
 5.000
 5.000
 5.000

AILRON
 .000
 .000
 .000
 .000

BETA0
 -5.000
 .000
 .000
 .000

RUDDER
 .000
 15.000
 .000
 15.000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XHRP 1109.0000 IN.X0
 YHRP .0000 IN.Y0
 ZHRP 375.0000 IN.Z0
 SCALE .0300

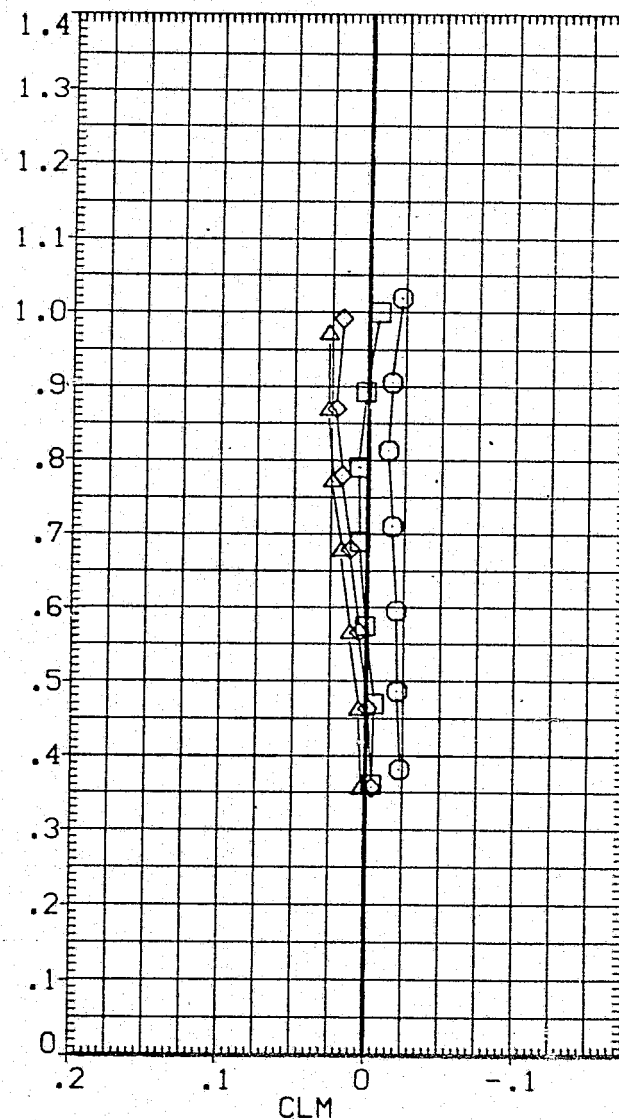
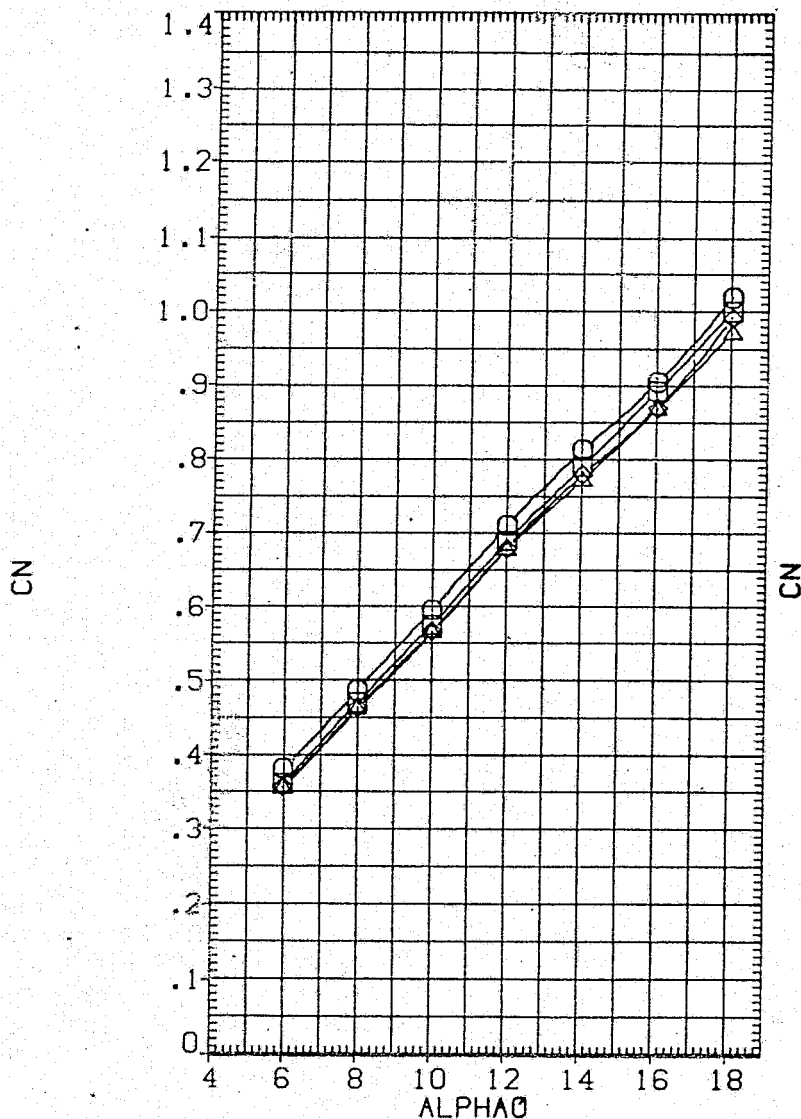


FIG 14 ORBITER ALONE RUDDER EFFECTS
 (B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN020)	CA20 03 S2
(NGN023)	DATA NOT AVAILABLE
(NGN025)	DATA NOT AVAILABLE
(NGN026)	DATA NOT AVAILABLE

ORBITER DATA

ELEVON	AILRON	BETA0	RUDDER	REFERENCE INFORMATION		
5.000	.000	-5.000	.000	SREF	2690.0000	50.FT.
5.000	.000	.000	15.000	LREF	474.8100	IN.
5.000	.000	.000	.000	BREF	936.6800	IN.
5.000	.000	.000	15.000	XMRP	1109.0000	IN.X0
				YMRP	.0000	IN.Y0
				ZMRP	375.0000	IN.Z0
				SCALE	.0300	

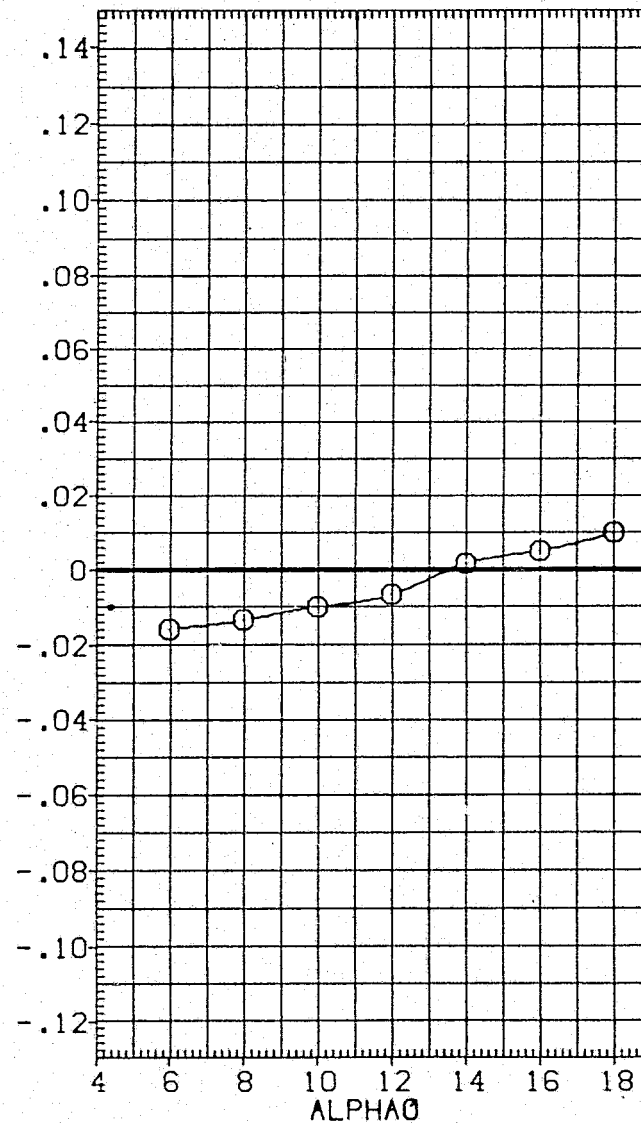
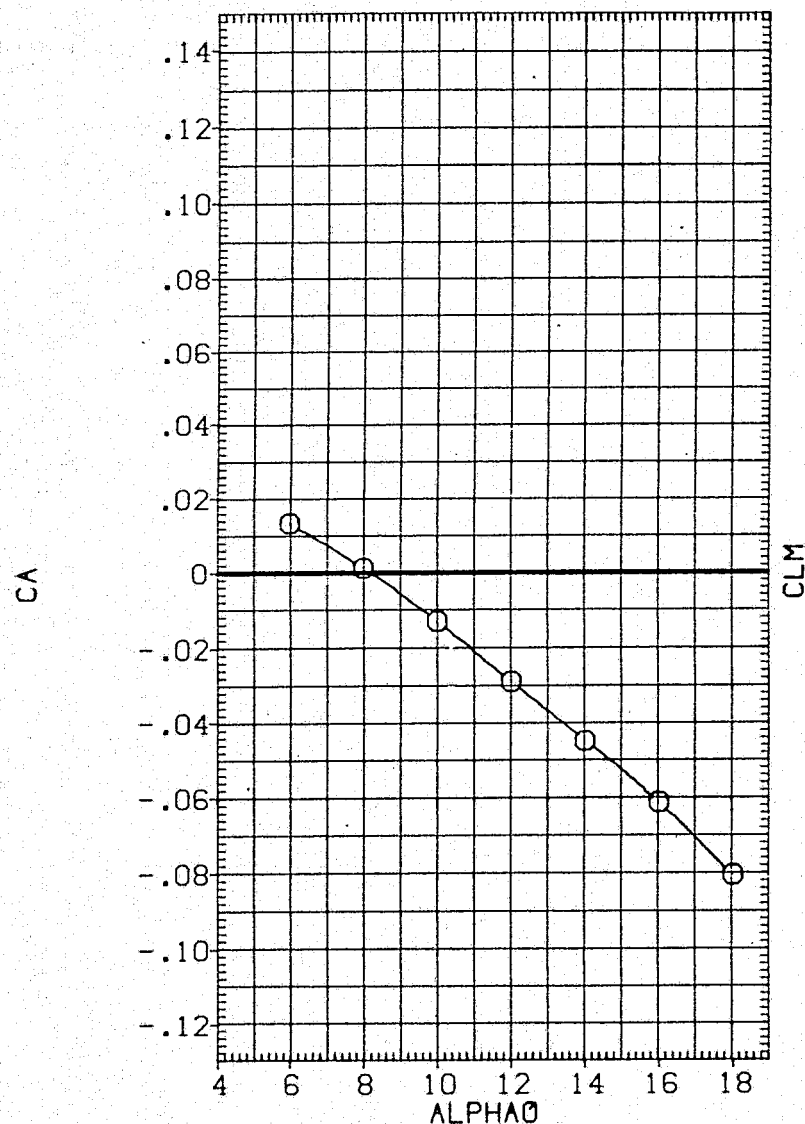


FIG 14 ORBITER ALONE RUDDER EFFECTS
(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGND20)	CA20 03 S2
(NGND23)	CA20 03 S2
(NGND25)	CA20 05 S2
(NGND26)	CA20 05 S2

ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0	RUDDER
5.000	.000	-5.000	.000
5.000	.000	.000	15.000
5.000	.000	.000	.000
5.000	.000	.000	15.000

REFERENCE INFORMATION		
SREF	2690.0000	50.FT.
LREF	474.8100	IN.
BREF	934.6800	IN.
XMRF	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

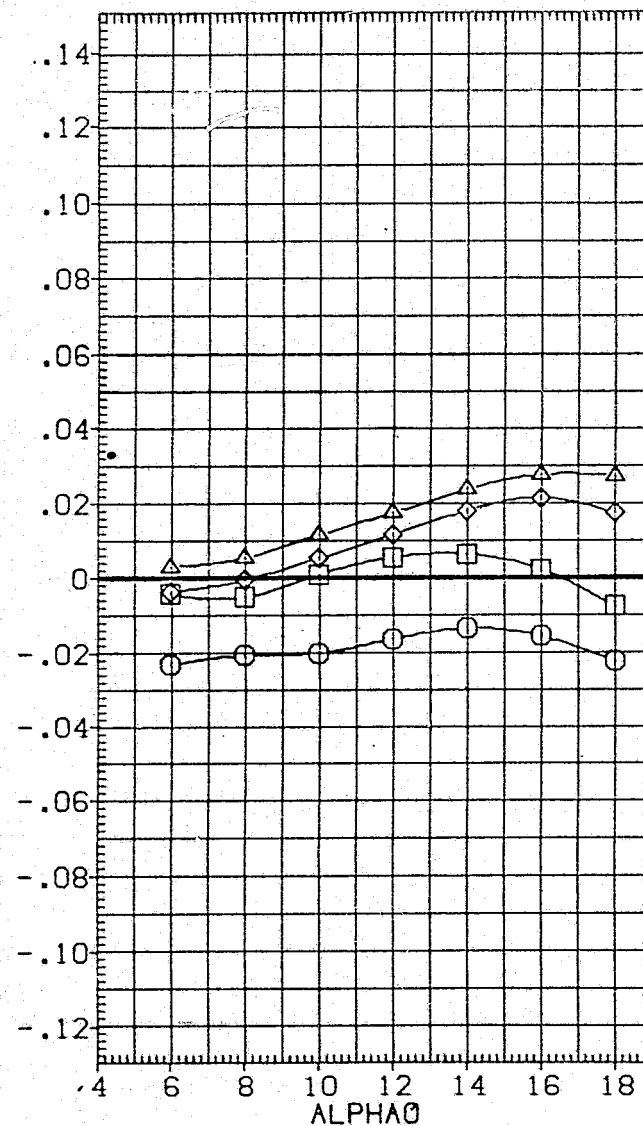
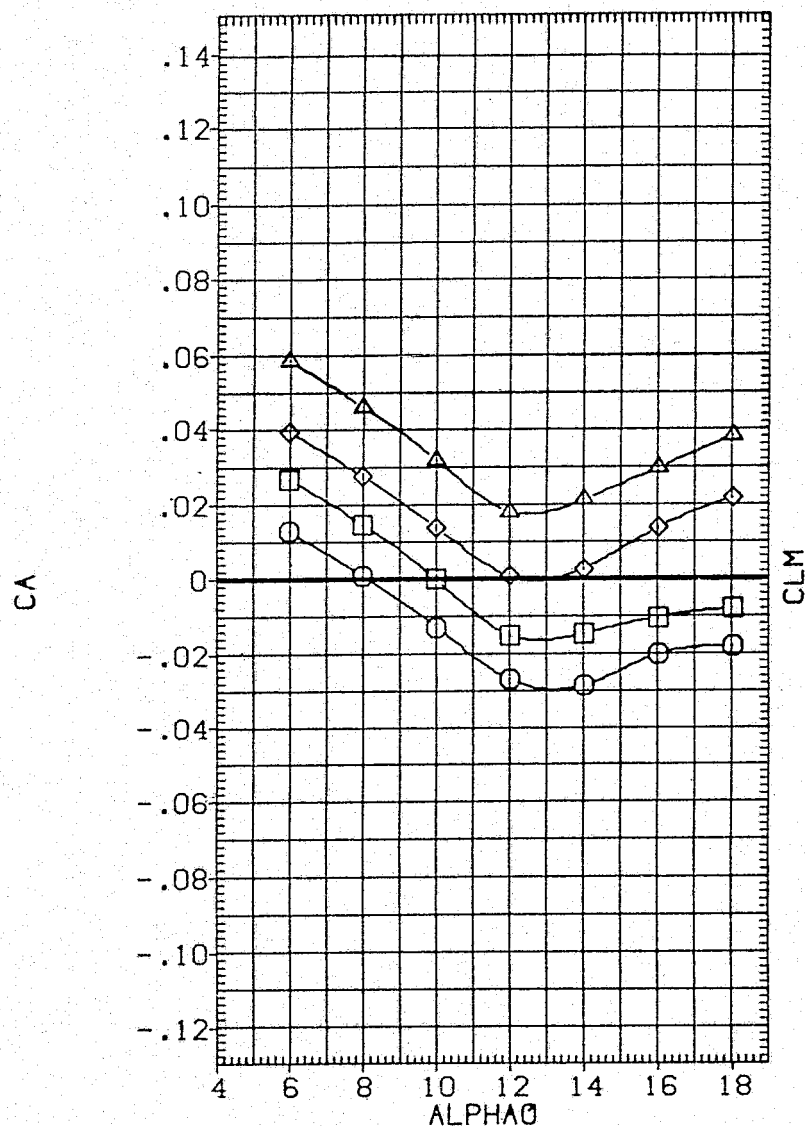


FIG 14 ORBITER ALONE RUDDER EFFECTS
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN020)	CA20 03 S2
(NGN023)	DATA NOT AVAILABLE
(NGN025)	DATA NOT AVAILABLE
(NGN026)	DATA NOT AVAILABLE

ORBITER DATA

ELEVON	AILRON	BETA0	RUDDER	REFERENCE INFORMATION
5.000	.000	-5.000	.000	SREF 2690.0000 SQ.FT.
5.000	.000	.000	15.000	LREF 474.8100 IN.
5.000	.000	.000	.000	BREF 936.6800 IN.
5.000	.000	.000	15.000	XMPP 1109.0000 IN.X0
				YMPP .0000 IN.Y0
				ZMPP 375.0000 IN.Z0
				SCALE .0300

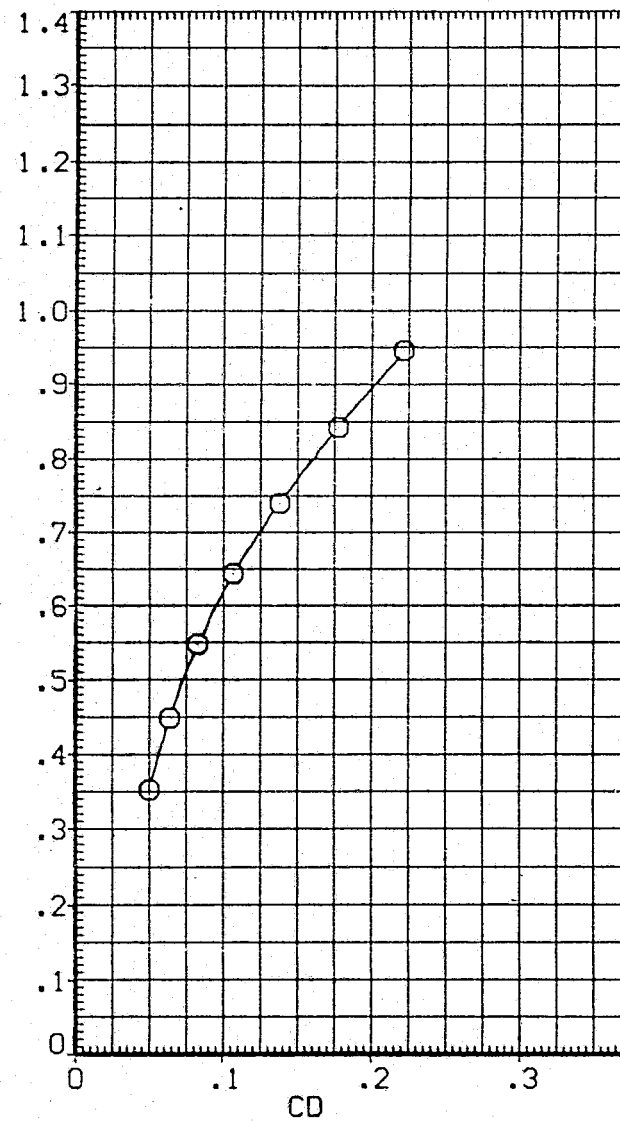
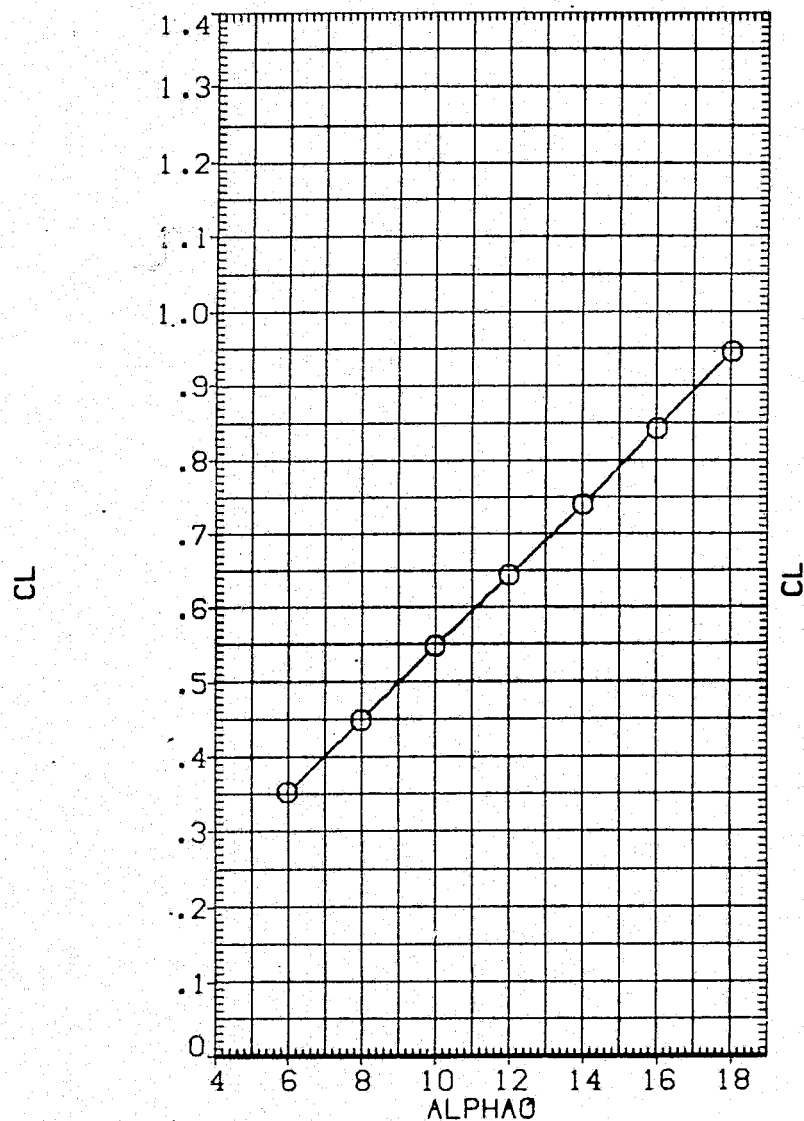


FIG 14 ORBITER ALONE RUDDER EFFECTS
(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN020)	CA20 03 S2
(NGN023)	CA20 03 S2
(NGN025)	CA20 05 S2
(NGN026)	CA20 05 S2

ORBITER DATA
ORBITER DATA
ORBITER DATA
ORBITER DATA

ELEVON	AILRON	BETA0	RUDDER	REFERENCE INFORMATION
5.000	.000	-5.000	.000	SREF 2690.0000 SQ.FT.
5.000	.000	.000	15.000	LREF 474.8100 IN.
5.000	.000	.000	.000	BREF 936.6800 IN.
5.000	.000	.000	15.000	XMRP 1109.0000 IN.X0
				YMRP .0000 IN.Y0
				ZMRP 375.0000 IN.Z0
				SCALE .0300

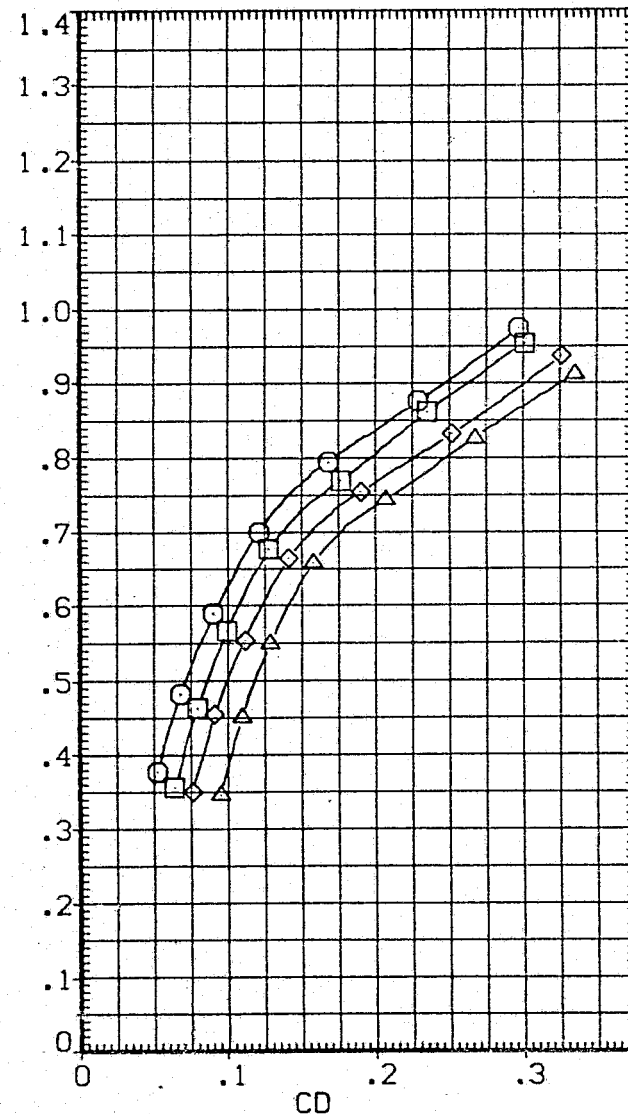
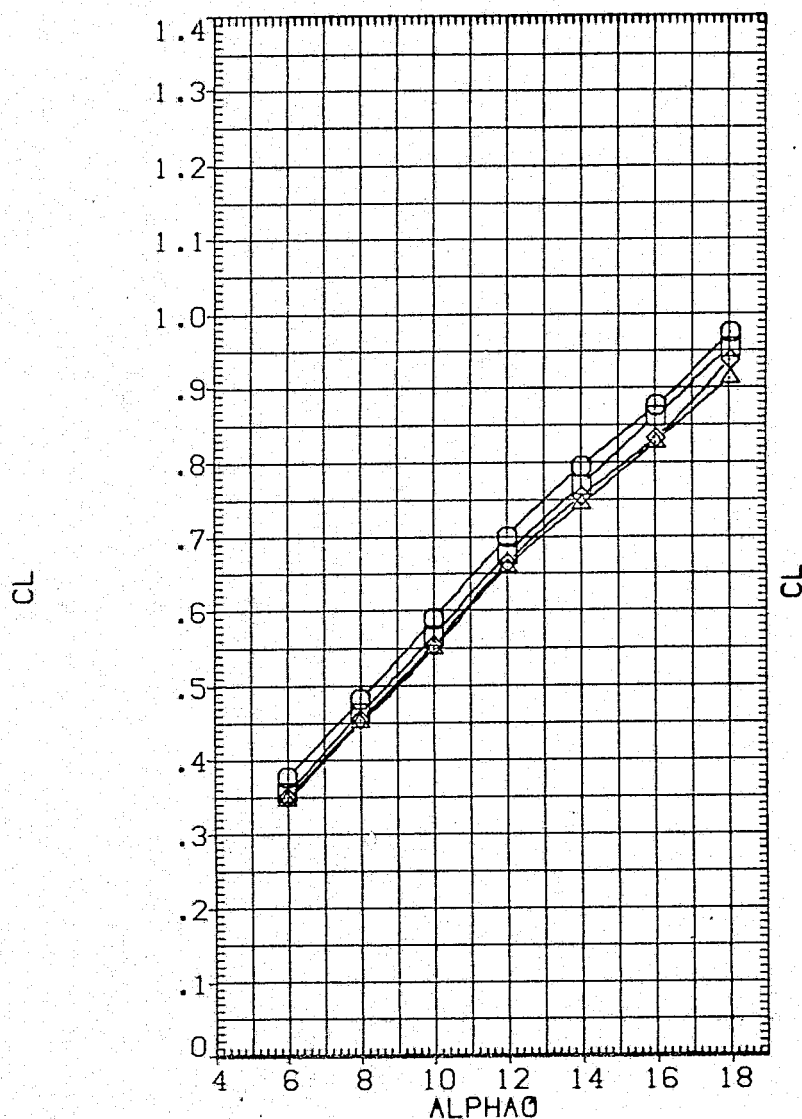


FIG 14 ORBITER ALONE RUDDER EFFECTS
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN020)	CA20 03 S2
(NGN023)	DATA NOT AVAILABLE
(NGN025)	DATA NOT AVAILABLE
(NGN026)	DATA NOT AVAILABLE

ORBITER DATA	ELEVON	AILRON	BETA0	RUDDER	REFERENCE INFORMATION
	5.000	.000	-5.000	.000	SREF 2690.0000 SQ.FT.
	5.000	.000	.000	15.000	LREF 474.8100 IN.
	5.000	.000	.000	.000	BREF 936.6800 IN.
	5.000	.000	.000	15.000	XMRP 1109.0000 IN.X0
					YMRP .0000 IN.Y0
					ZMRP 375.0000 IN.Z0
					SCALE .0300

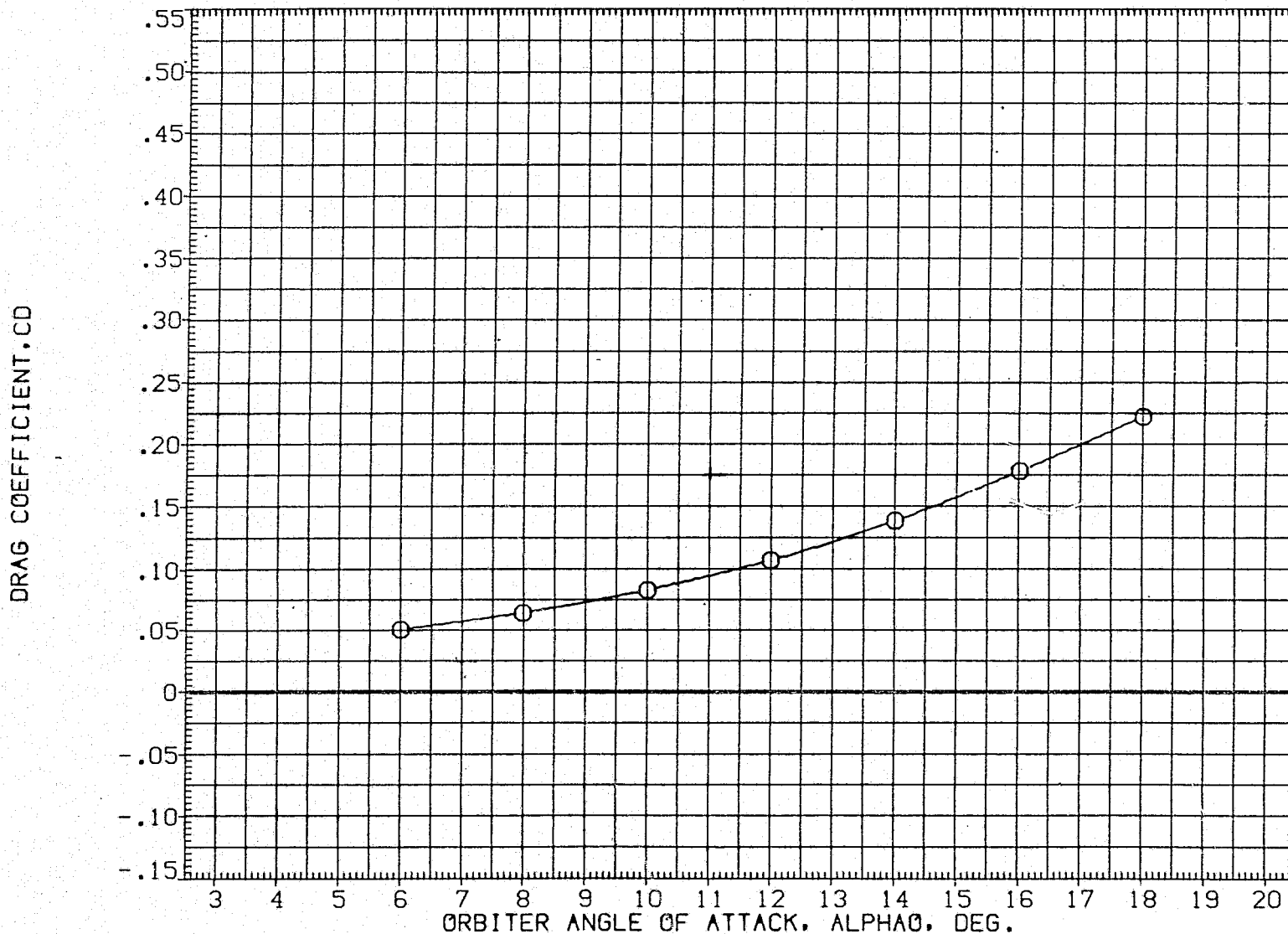


FIG 14 ORBITER ALONE RUDDER EFFECTS

(A)MACH = .30

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(NGN020)	CA20 03 S2
(NGN023)	CA20 03 S2
(NGN025)	CA20 05 S2
(NGN026)	CA20 05 S2

ORBITER DATA	ELEVON	AILRON	BETA0	RUDDER	REFERENCE INFORMATION
ORBITER DATA	5.000	.000	-5.000	.000	SREF 2690.0000 SQ.FT.
ORBITER DATA	5.000	.000	.000	15.000	LREF 474.8100 IN.
ORBITER DATA	5.000	.000	.000	.000	BREF 936.6800 IN.
ORBITER DATA	5.000	.000	.000	15.000	XMRP 1109.0000 IN.X0
					YMRP .0000 IN.Y0
					ZMRP 375.0000 IN.Z0
					SCALE .0300

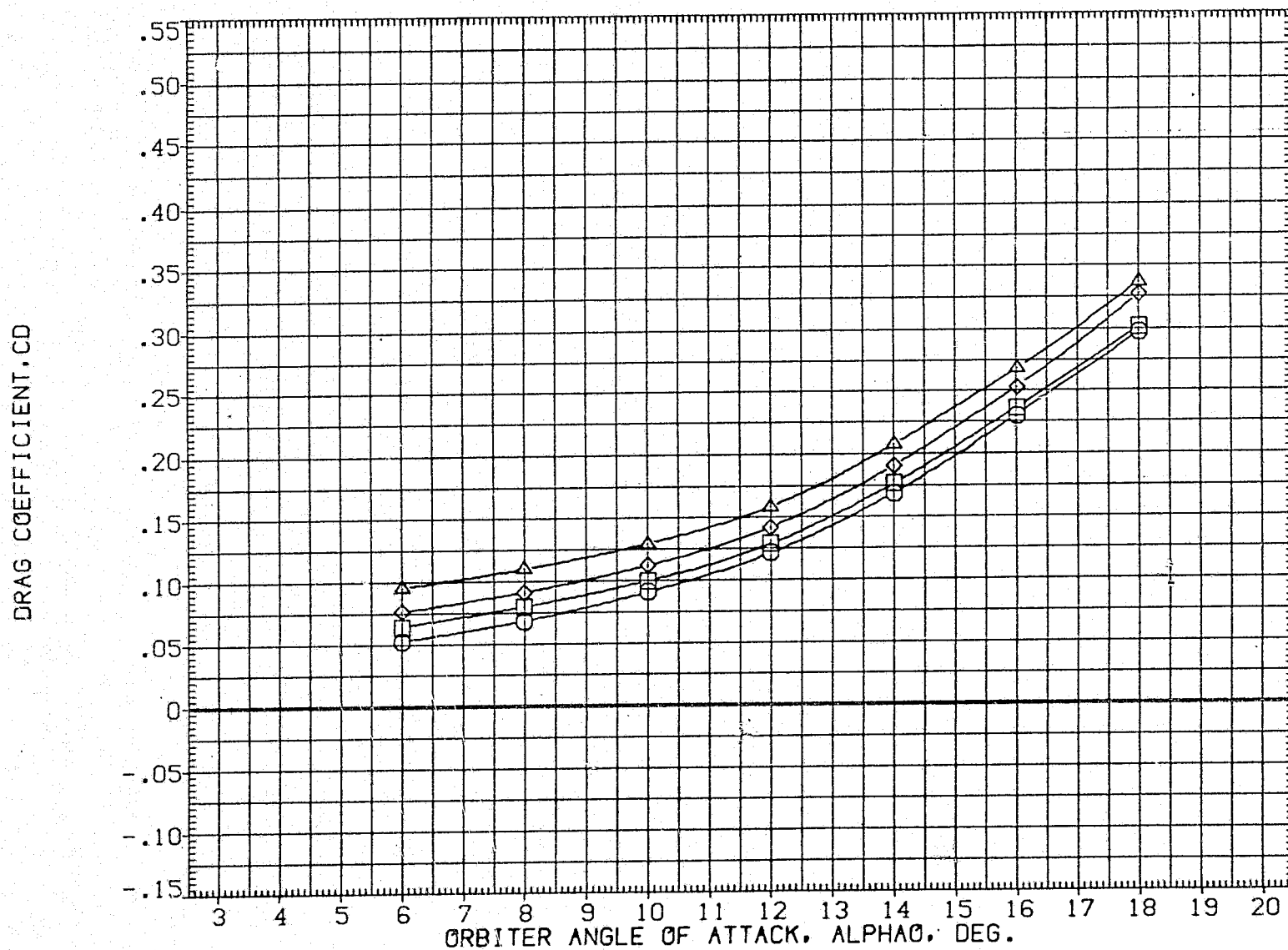
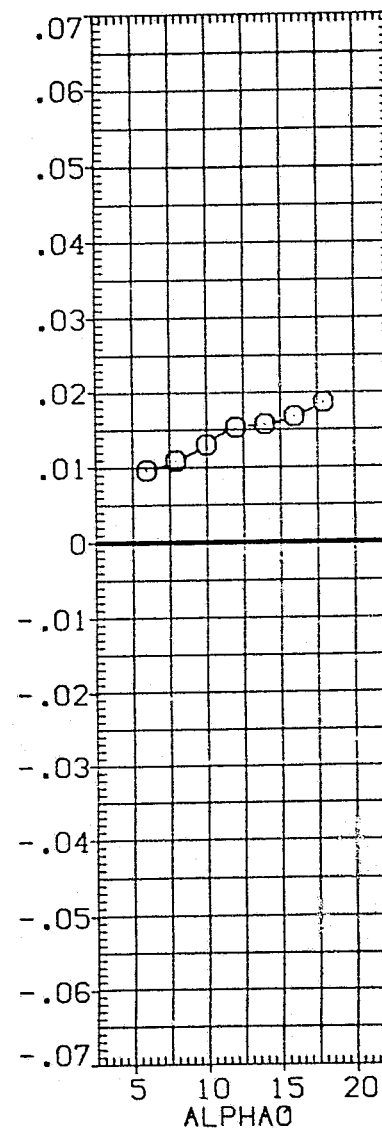
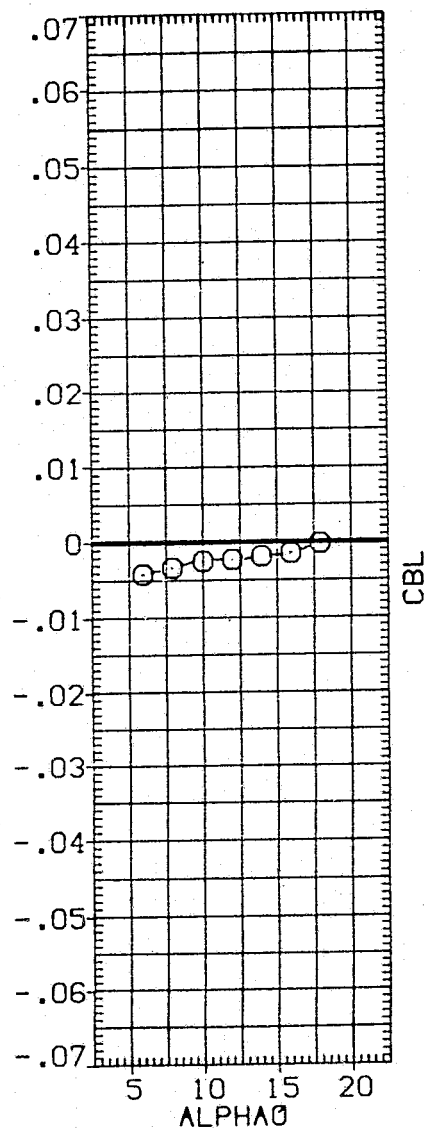


FIG 14 ORBITER ALONE RUDDER EFFECTS
(B)MACH = .60

ORBITER DATA		ELEVON	AILERON	BETA	RUDDER	REFERENCE INFORMATION	
	5.000	.000	-5.000	.000	SREF	2690.0000	SQ.FT.
	5.000	.000	.000	15.000	LREF	474.8100	IN.
	5.000	.000	.000	.000	BREF	936.6800	IN.
	5.000	.000	.000	15.000	XMRP	1109.0030	IN.X0
					YMRP	.0000	IN.Y0
					ZMRP	375.0000	IN.Z0
					SCALE	.0300	



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DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(NGN020)	○	CA20	03 S2
(NGN023)	□	CA20	03 S2
(NGN025)	◇	CA20	05 S2
(NGN026)	△	CA20	05 S2

	ELEVON	AILRON	BETA0
ORBITER DATA	5.000	.000	-5.000
ORBITER DATA	5.000	.000	.000
ORBITER DATA	5.000	.000	.000
ORBITER DATA	5.000	.000	.000

RUDDER	REFERENCE INFORMATION	
.000	SREF	2690.0000 SQ.FT.
15.000	LREF	474.8100 IN.
.000	BREF	935.6800 IN.
15.000	XMRP	1109.0000 IN.X0
	YMRP	.0000 IN.Y0
	ZMRP	375.0000 IN.Z0
	SCALE	.0300

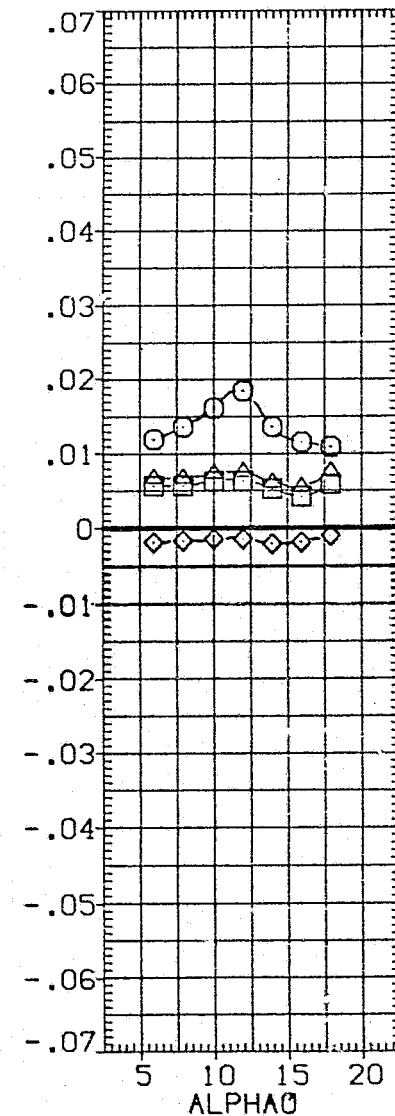
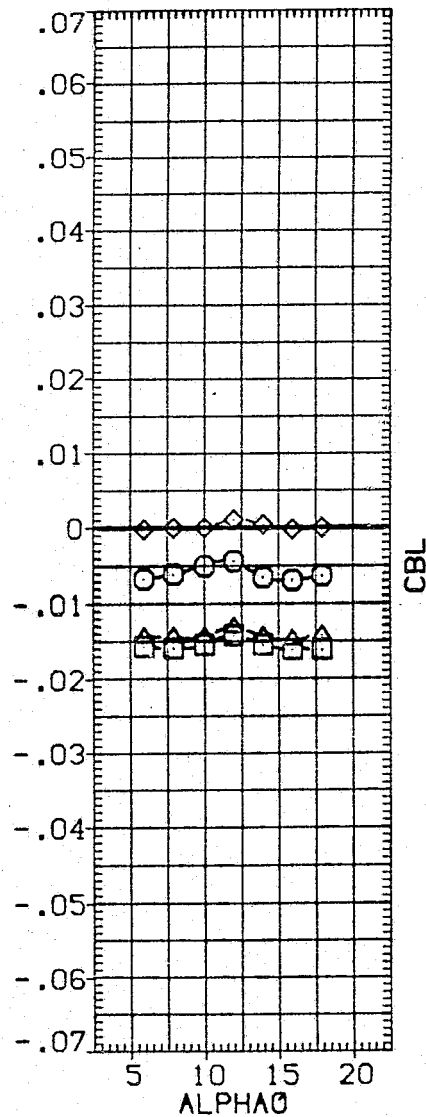
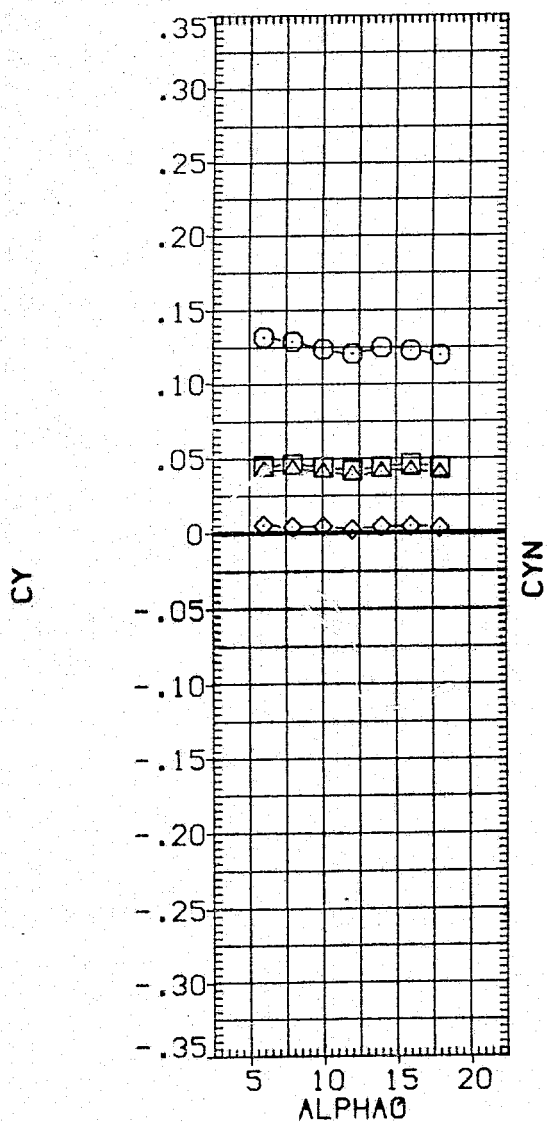


FIG 14 ORBITER ALONE RUDDER EFFECTS
(B)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(MGNO34)	CA20 747/1
(MGNO35)	CA20 747/1
(MGNO36)	CA20 747/1

CARRIER DATA
CARRIER DATA
CARRIER DATA

BETAC	ELV-1B	ELV-0B
-5.000	.000	3.000
.000	.000	3.000
5.000	.000	3.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

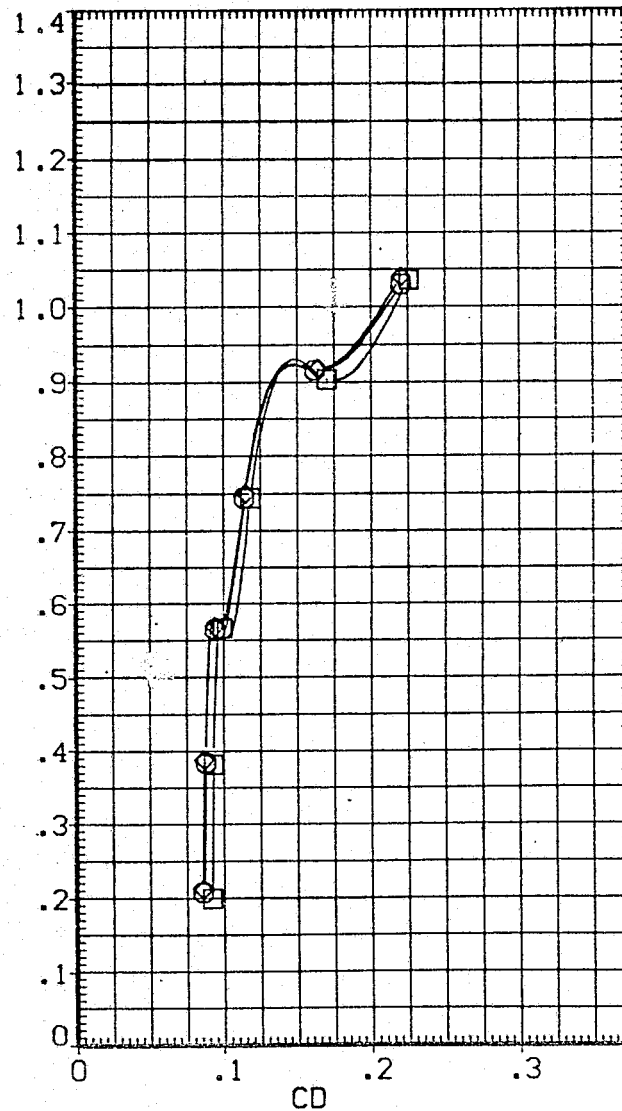
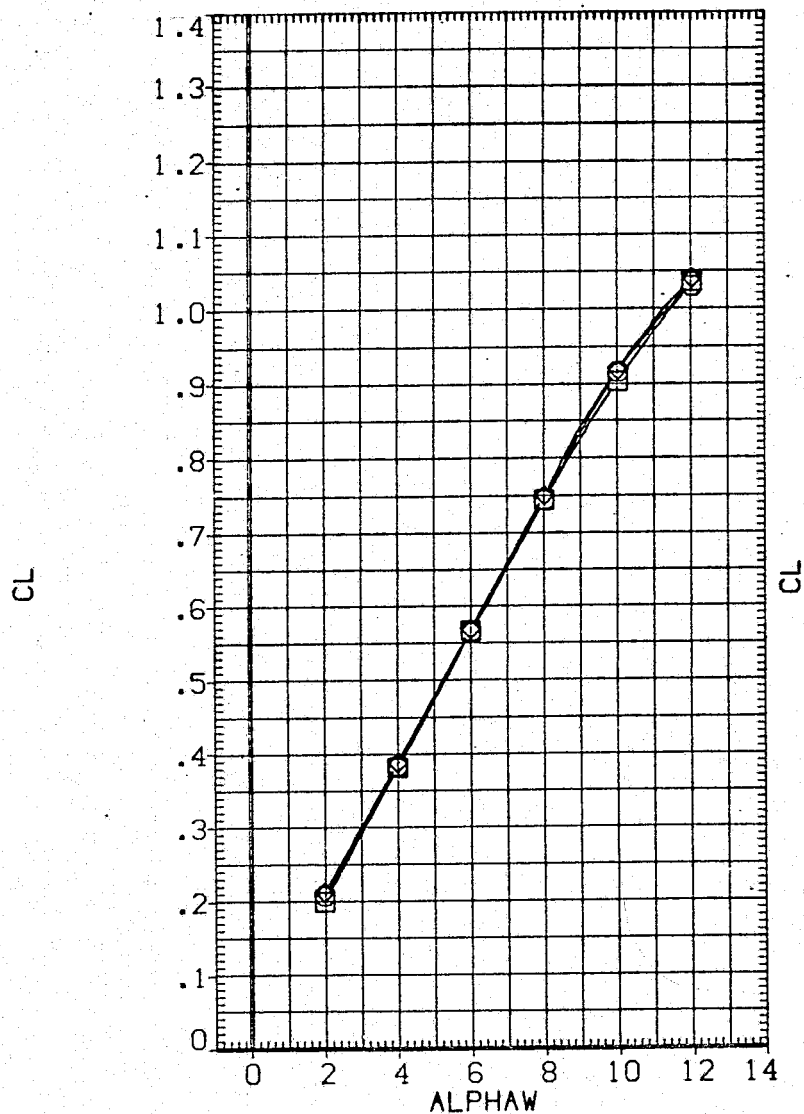


FIG 15 CARRIER ALONE BASIC AERODYNAMIC CHARACTERISTICS

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(MGNO34) □ CA20 747/1
 (MGNO35) □ CA20 747/1
 (MGNO36) ◇ CA20 747/1

CARRIER DATA
 CARRIER DATA
 CARRIER DATA

BETAC -5.000
 ELV-1B .000
 ELV-0B 3.000
 .000
 .000
 3.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.9000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

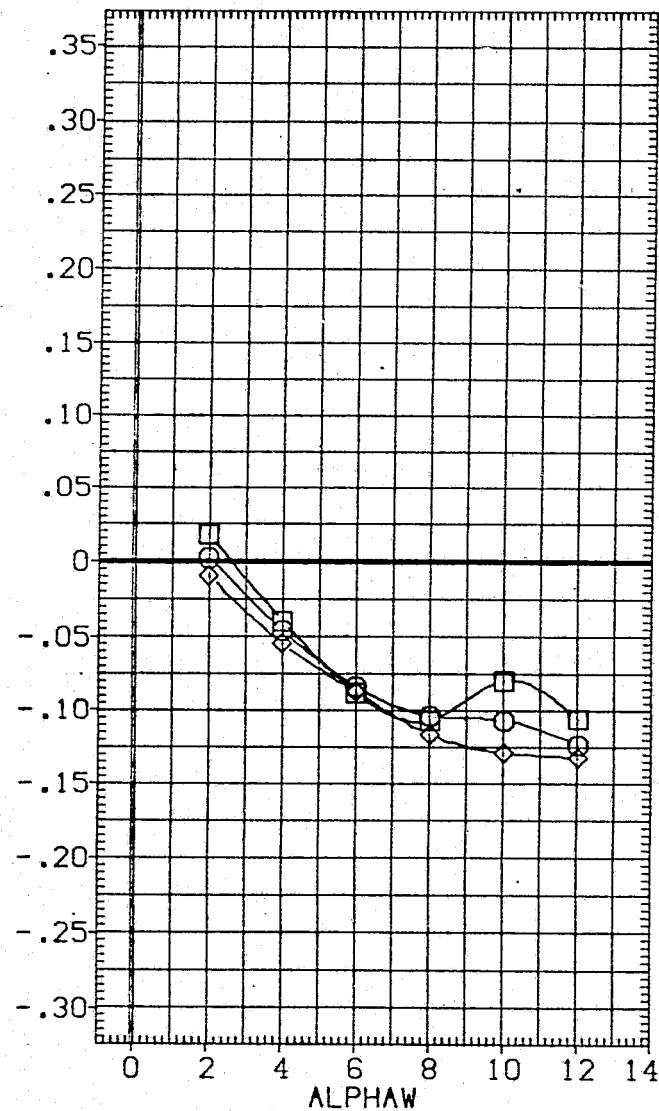
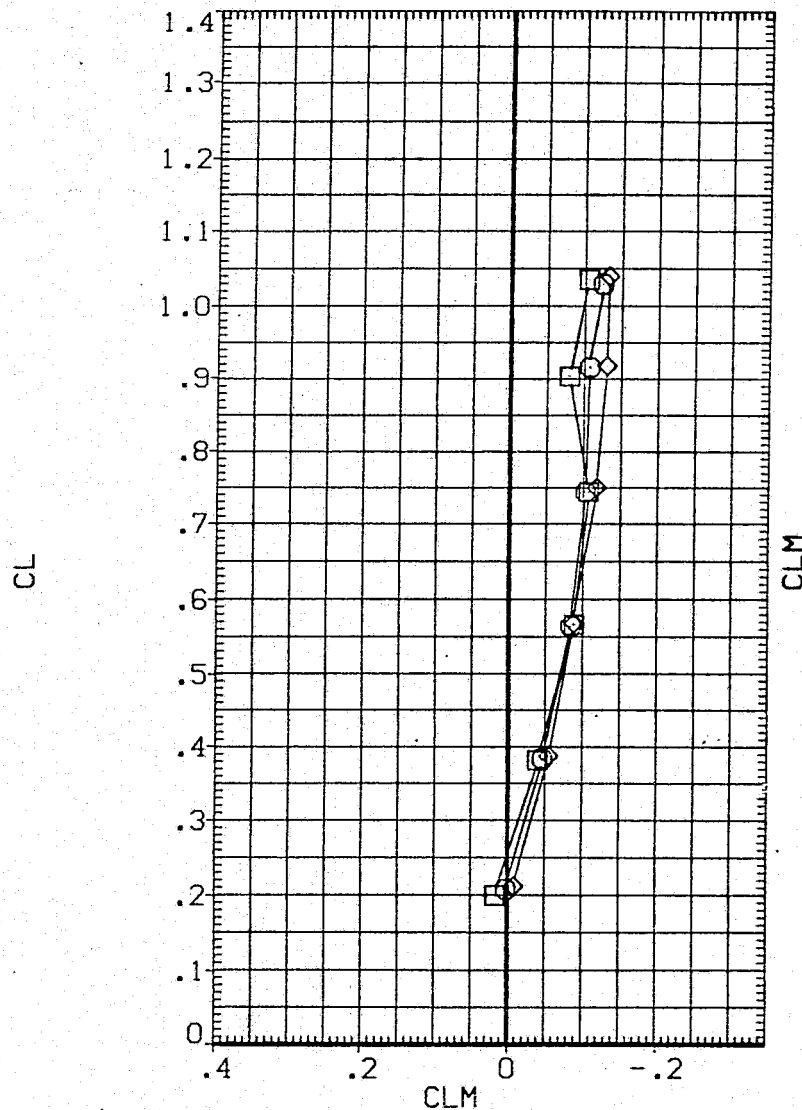


FIG 15 CARRIER ALONE BASIC AERODYNAMIC CHARACTERISTICS

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(MGNO34)	CA20 747/1
(MGNO35)	CA20 747/1
(MGNO36)	CA20 747/1

	BETAC	ELV-1B	ELV-0B
CARRIER DATA	-5.000	.000	3.000
CARRIER DATA	.000	.000	3.000
CARRIER DATA	5.000	.000	3.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

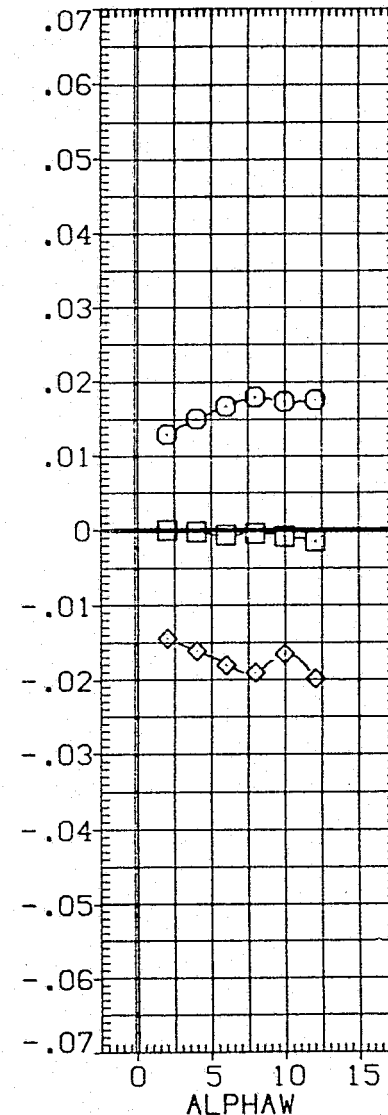
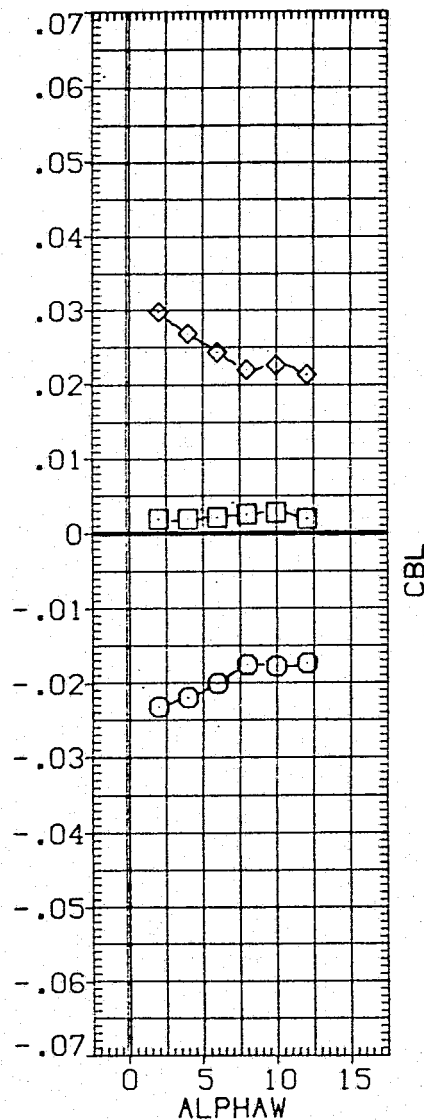
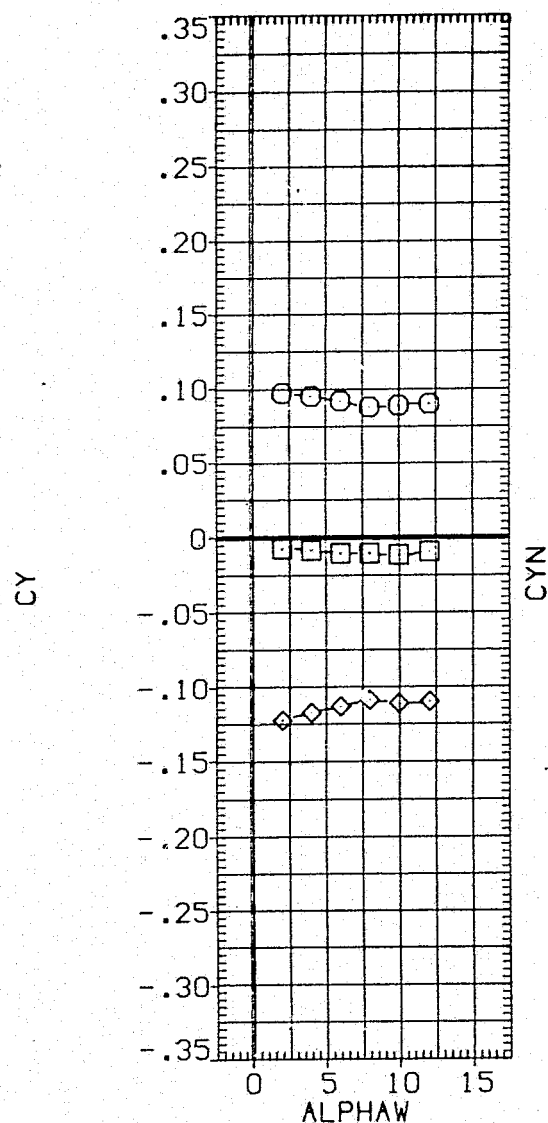


FIG 15 CARRIER ALONE BASIC AERODYNAMIC CHARACTERISTICS

(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(MGNO34) ○ CA20 747/1
(MGNO35) □ CA20 747/1
(MGNO36) ◇ CA20 747/1

CARRIER DATA BETAC ELV-1B ELV-0B
CARRIER DATA -5.000 .000 3.000
CARRIER DATA .000 .000 3.000
CARRIER DATA 5.000 .000 3.000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

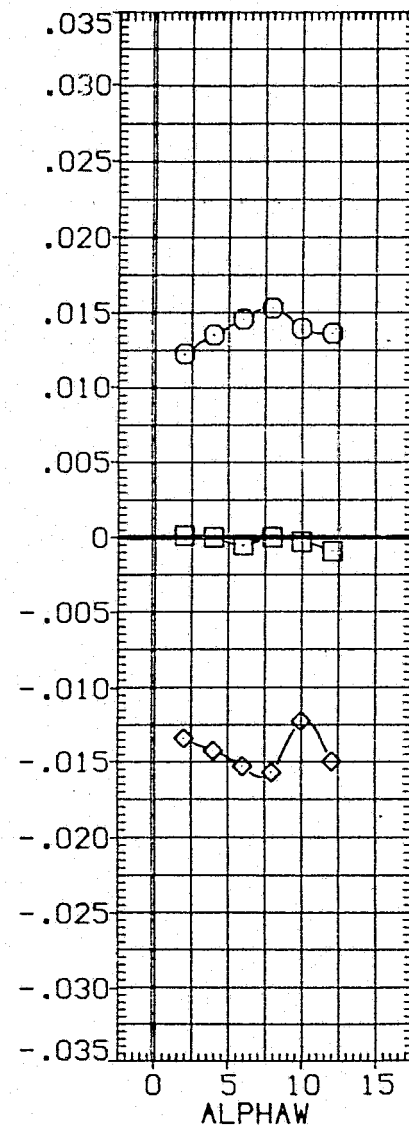
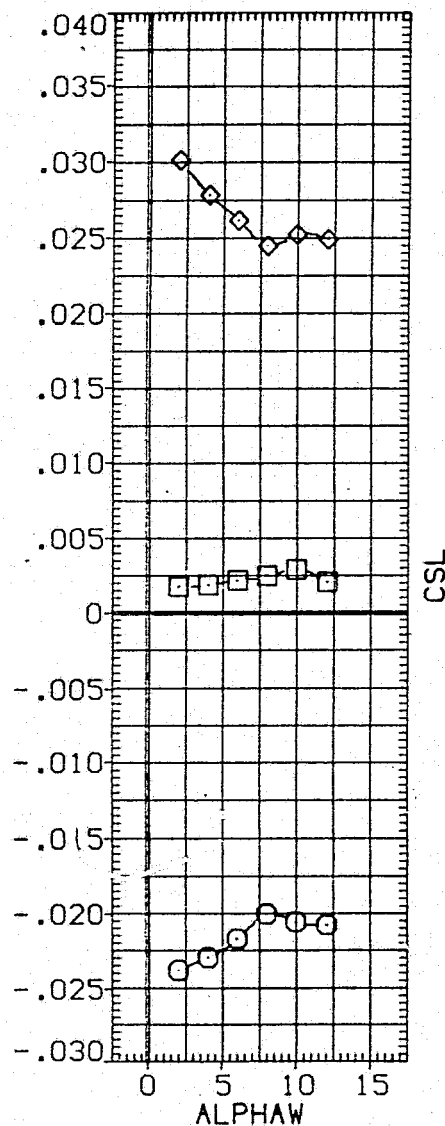
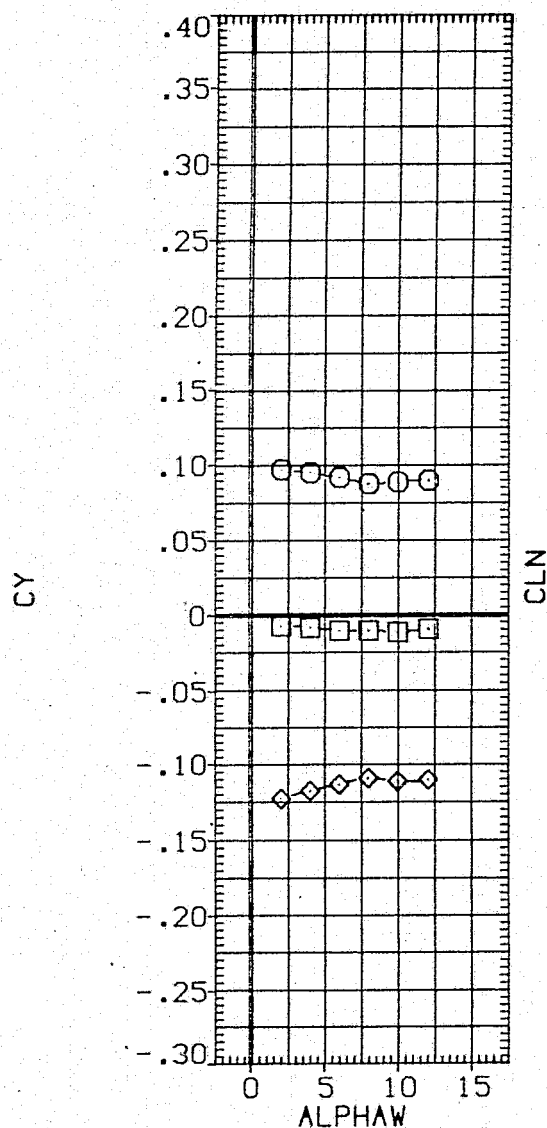


FIG 15 CARRIER ALONE BASIC AERODYNAMIC CHARACTERISTICS
(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(MGN038)	CA20 747/1 01 S1
(MGN039)	CA20 747/1 01 S1

	ALPHA0	ALPHAC	DY	DZ	REFERENCE INFORMATION
CARRIER DATA	10.000	4.000	.000	7.500	SREF 5500.0000 SQ.FT.
CARRIER DATA	10.000	4.000	10.000	7.500	LREF 327.7800 IN.
					BREF 2348.0400 IN.
					XMRP 1339.9000 IN.XC
					YMRP .0000 IN.YC
					ZMRP 190.8000 IN.ZC
					SCALE .0300

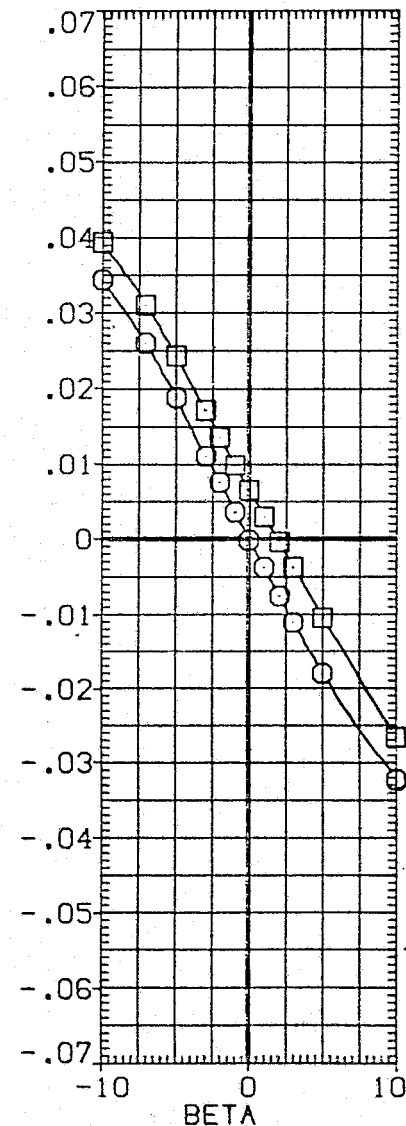
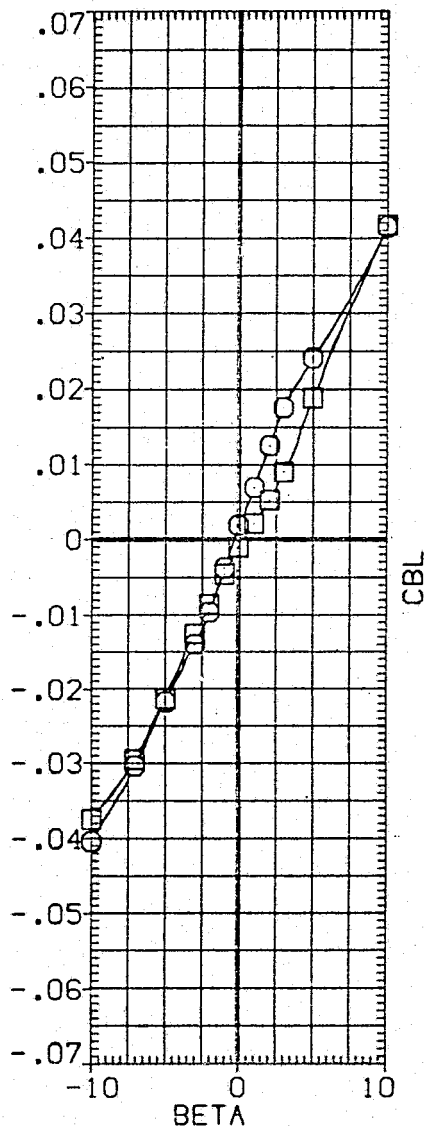
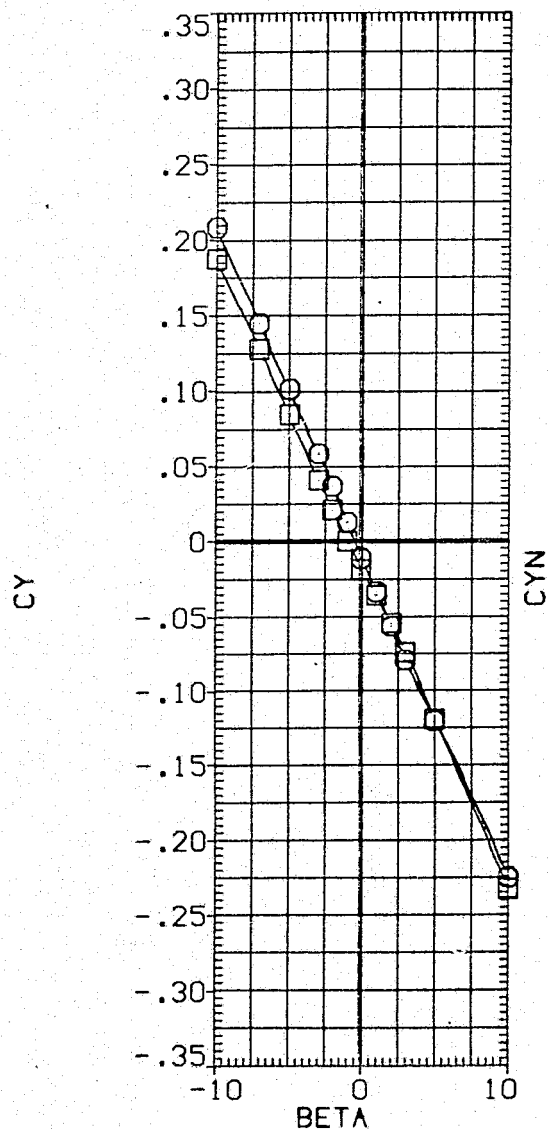


FIG 16 CARRIER SIDESLIP EFFECTS IN PRESENCE OF ORBITER (BETA SWEEP)

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION
(MGNO38)	CA20	747/1 01 S1
(MGNO39)	CA20	747/1 01 S1

CARRIER DATA	ALPHA0	ALPHAC	DY	DZ
CARRIER DATA	10.000	4.000	.000	7.500
CARRIER DATA	10.000	4.000	10.000	7.500

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

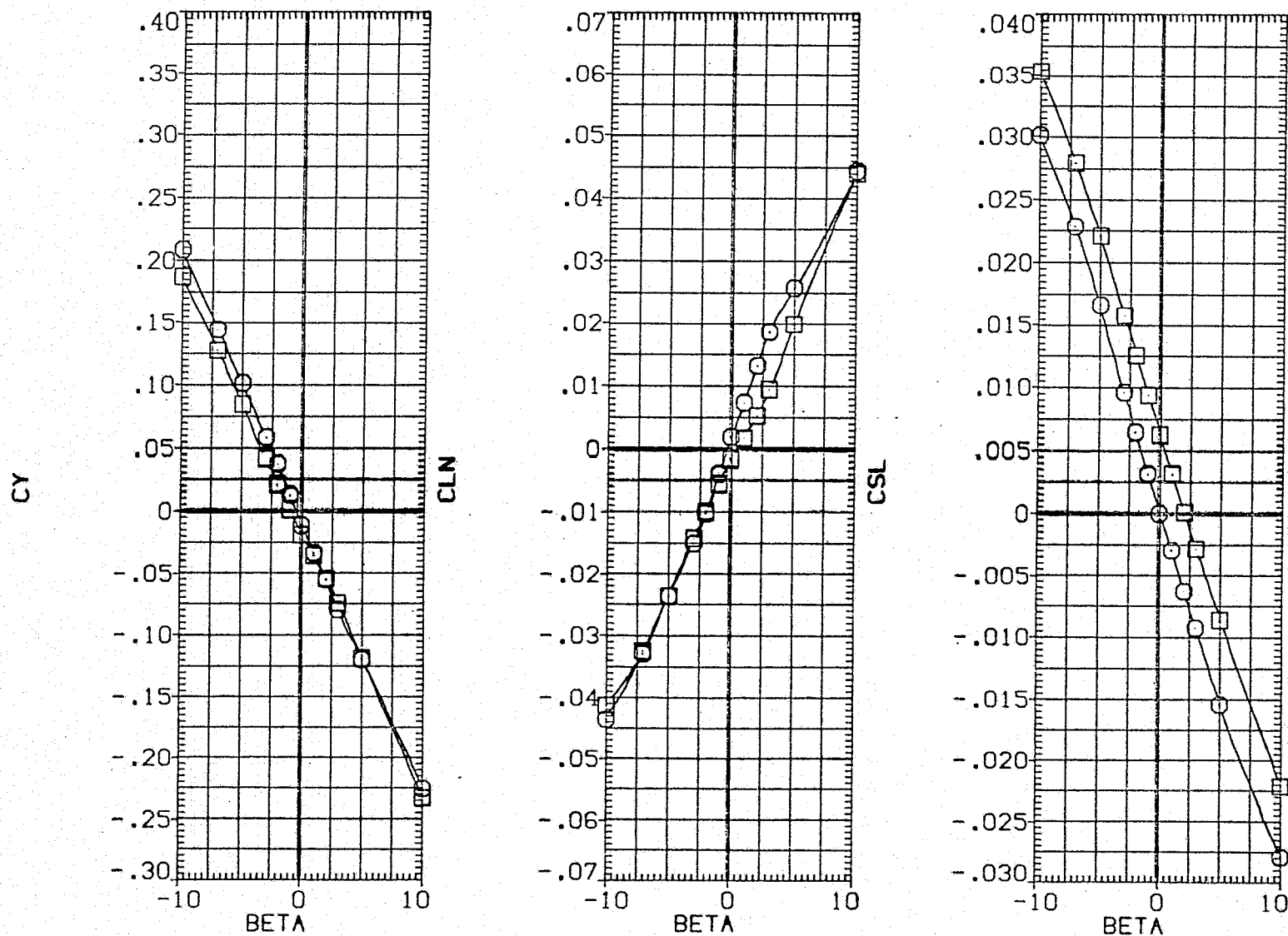


FIG 16 CARRIER SIDESLIP EFFECTS IN PRESENCE OF ORBITER (BETA SWEEP)
(A)MACH = .60

DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION
(NGN038)	○	CA20	747/1 01 S1
(NGN039)	□	CA20	747/1 01 S1

	ALPHA0	ALPHAC	DY	DZ	REFERENCE INFORMATION	
ORBITER DATA	10.000	4.000	.000	7.500	SREF	2690.0000 SQ.FT.
ORBITER DATA	10.000	4.000	10.000	7.500	LREF	474.8100 IN.
					BREF	936.6800 IN.
					XMRP	1109.0000 IN.X0
					YMRP	.0000 IN.Y0
					ZMRP	375.0000 IN.Z0
					SCALE	.0300

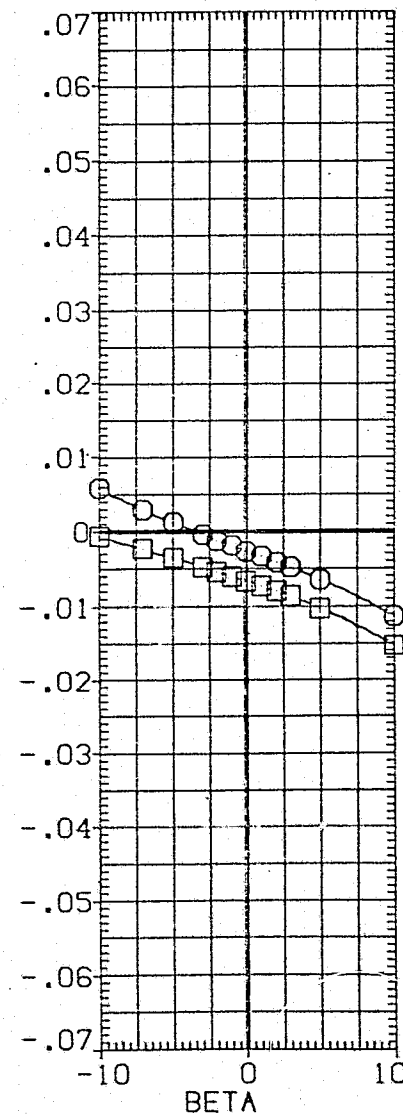
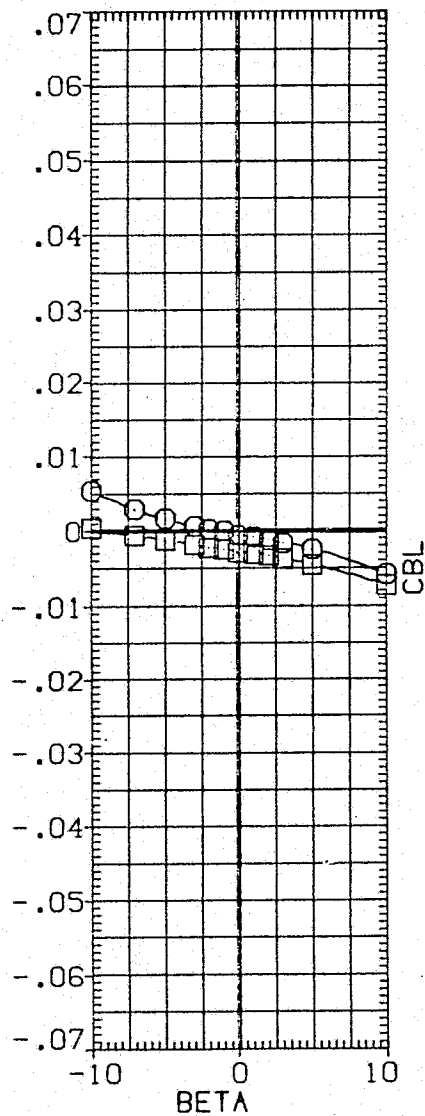
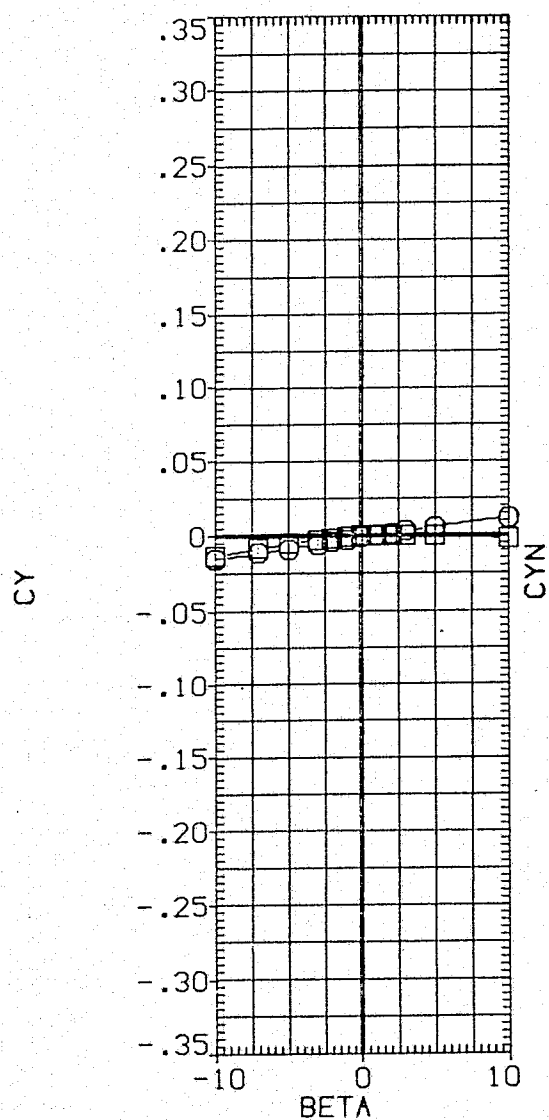


FIG 17 ORBITER SIDESLIP EFFECTS IN PRESENCE OF CARRIER
(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN038) CA20 747/1 01 S1
 (NGN039) CA20 747/1 01 S1

	ALPHA0	ALPHAC	DY	DZ	REFERENCE INFORMATION		
ORBITER DATA	10.000	4.000	.000	7.500	SREF	2690.0000	50.FT.
ORBITER DATA	10.000	4.000	10.000	7.500	LREF	474.8100	IN.
					BREF	936.6800	IN.
					XMRP	1109.0000	IN.X0
					YMRP	.0000	IN.Y0
					ZMRP	375.0000	IN.Z0
					SCALE	.0300	

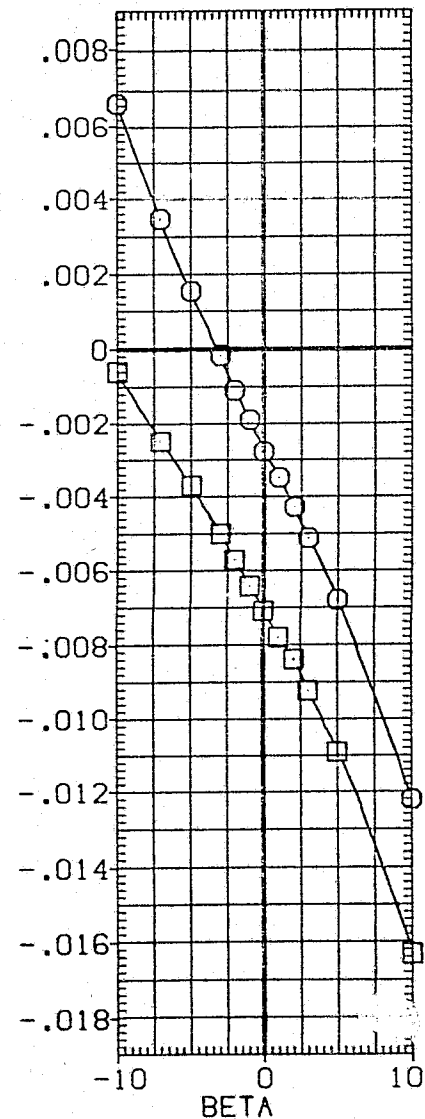
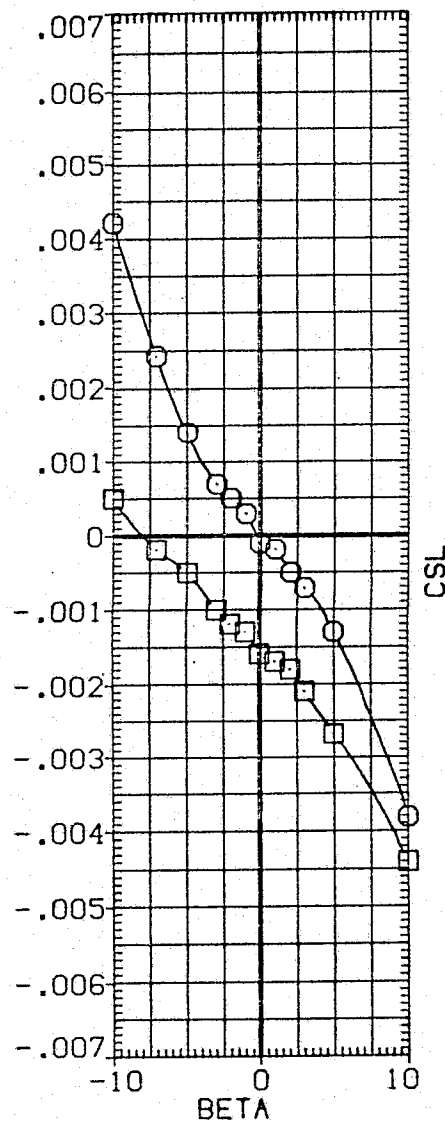
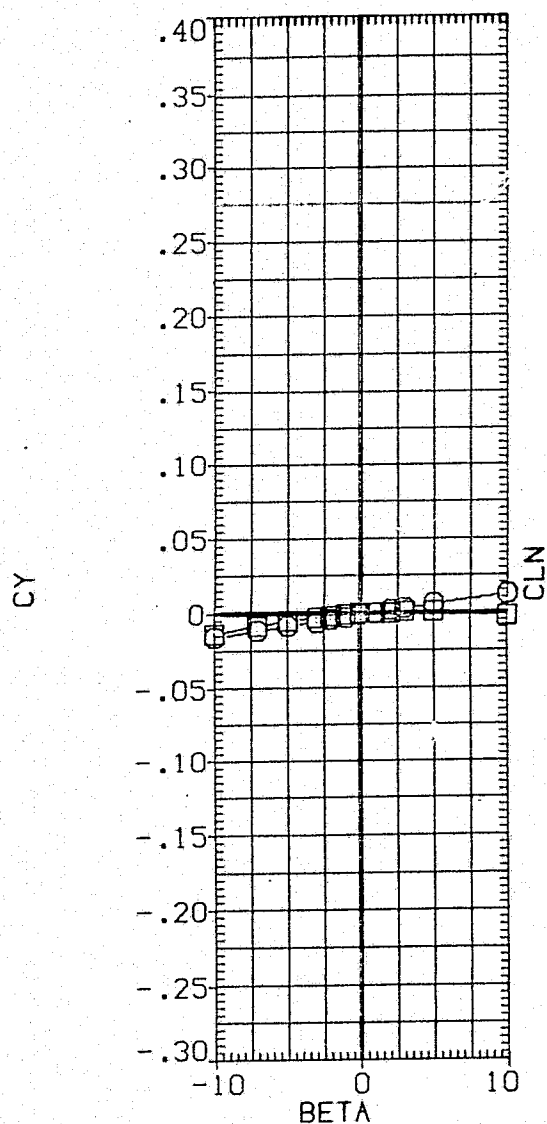


FIG 17 ORBITER SIDESLIP EFFECTS IN PRESENCE OF CARRIER
 (A) MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(MGN037) ○ CA20 747/1 01 S1

CARRIER DATA

ALPHAC 4.000

DX .000

DY .000

DZ 7.500

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

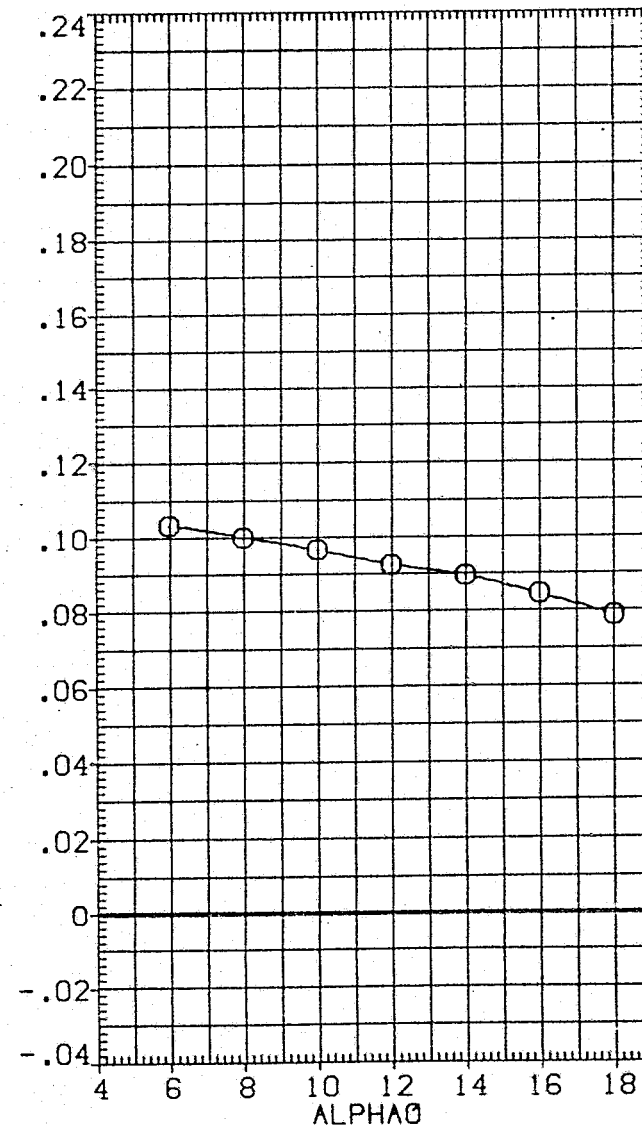
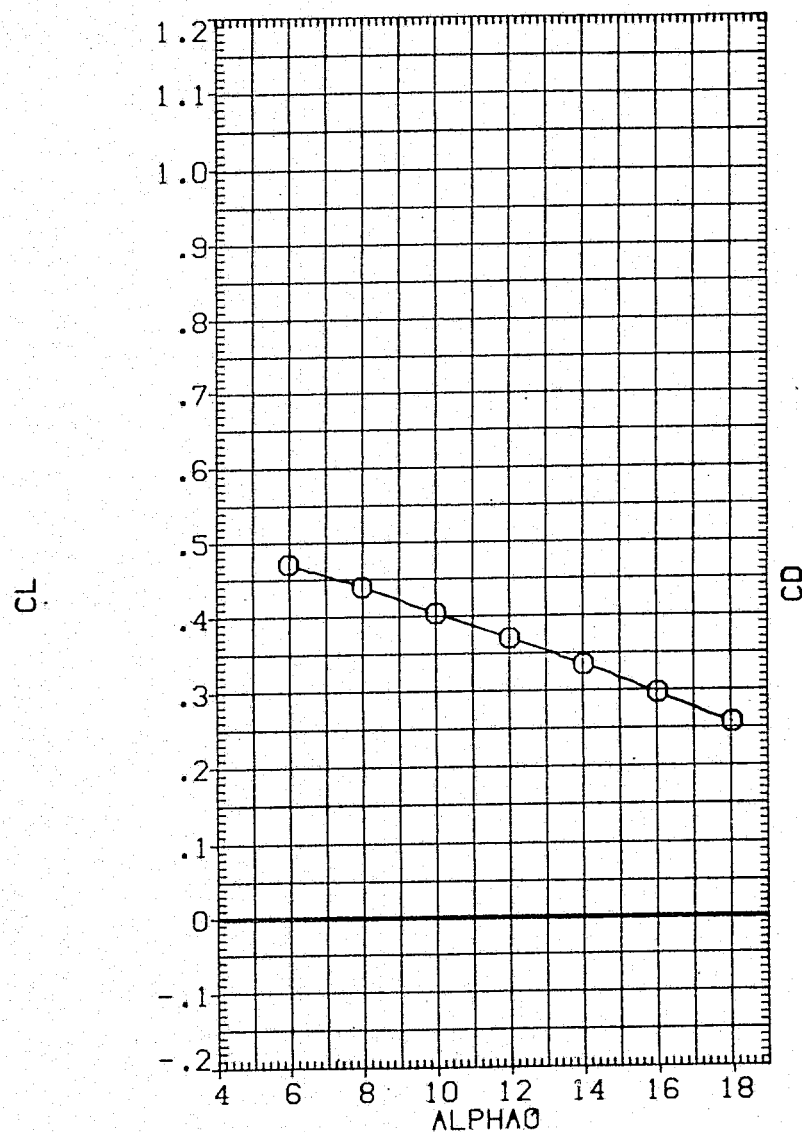


FIG 18 ORBITER ANGLE OF ATTACK EFFECTS ON CARRIER IN PRESENCE OF ORBITER
(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(MGN037) ○ CA20 747/1 01 S1

CARRIER DATA

ALPHAC 4.000 DX .000 DY .000 DZ 7.500

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

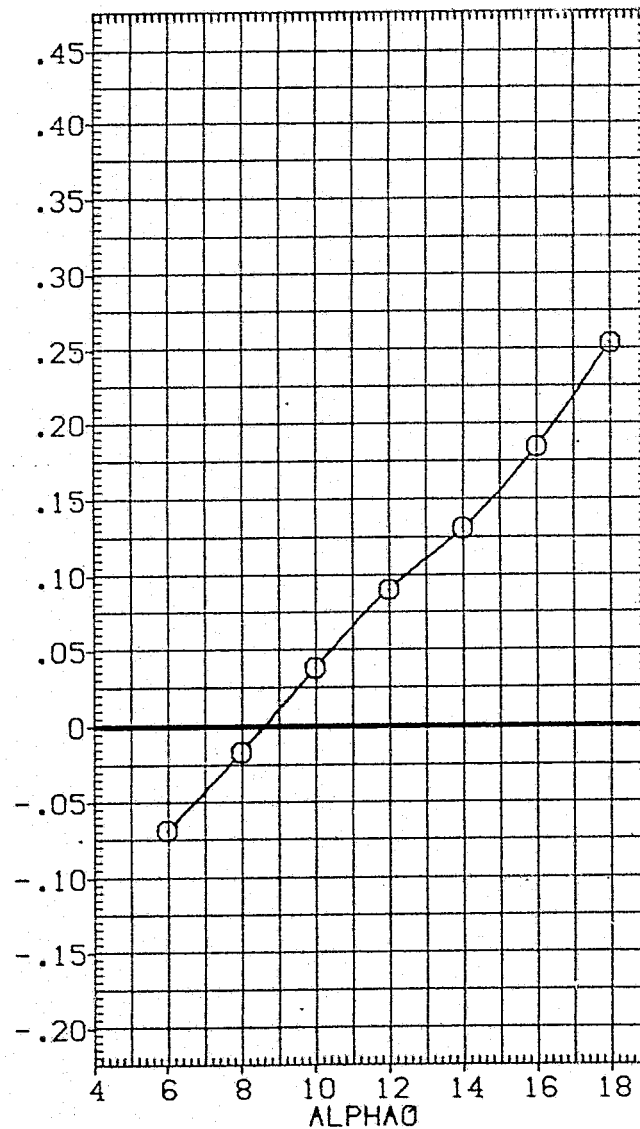
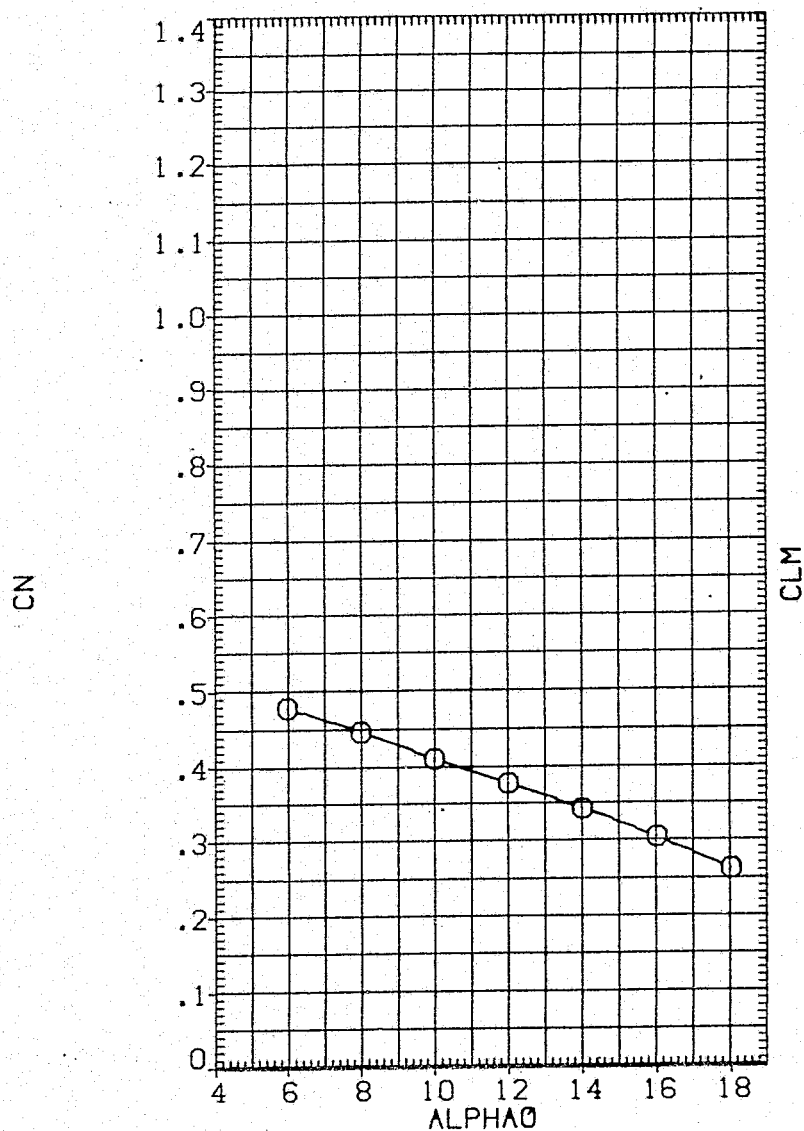


FIG 18 ORBITER ANGLE OF ATTACK EFFECTS ON CARRIER IN PRESENCE OF ORBITER
(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(MGNO37) ○ CA20 747/1 01 S1

CARRIER DATA ALPHAC 4.000 DX .000 DY .000 DZ 7.500

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

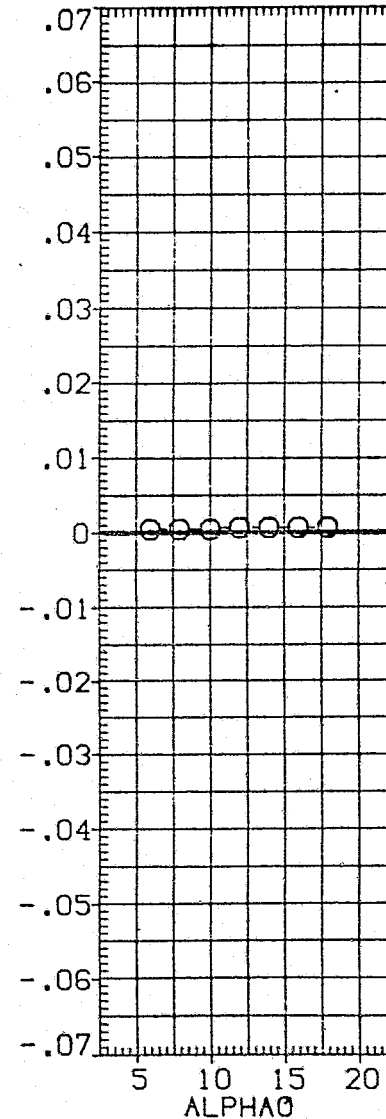
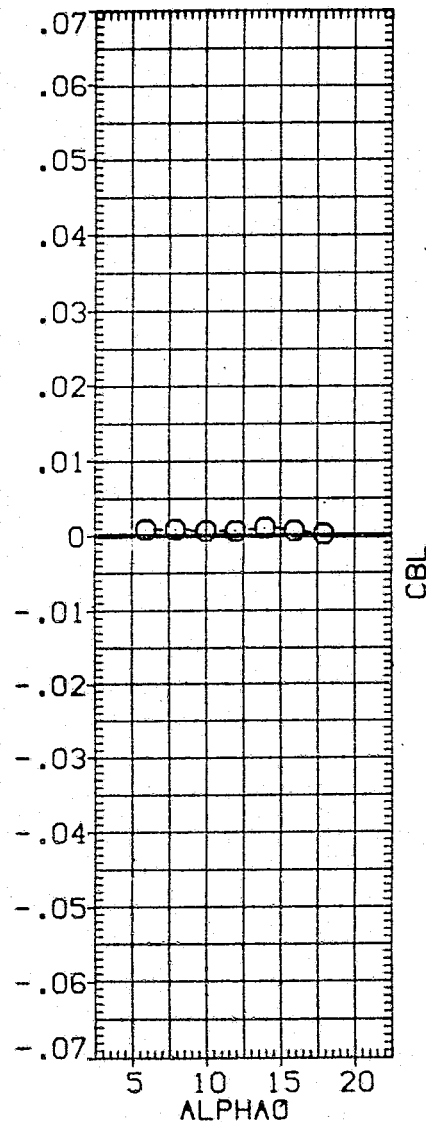
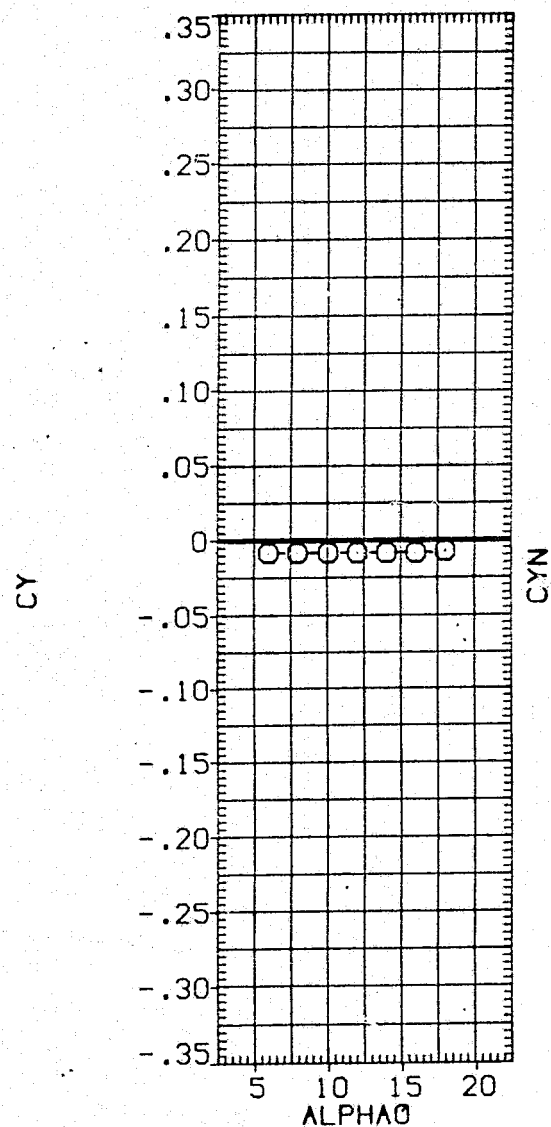


FIG. 18 ORBITER ANGLE OF ATTACK EFFECTS ON CARRIER IN PRESENCE OF ORBITER
(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(MGNO37) ○ CA20 747/1 01 S1

CARRIER DATA ALPHAC DX
4.000 .000

DY DZ
.000 7.500

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7200 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0000

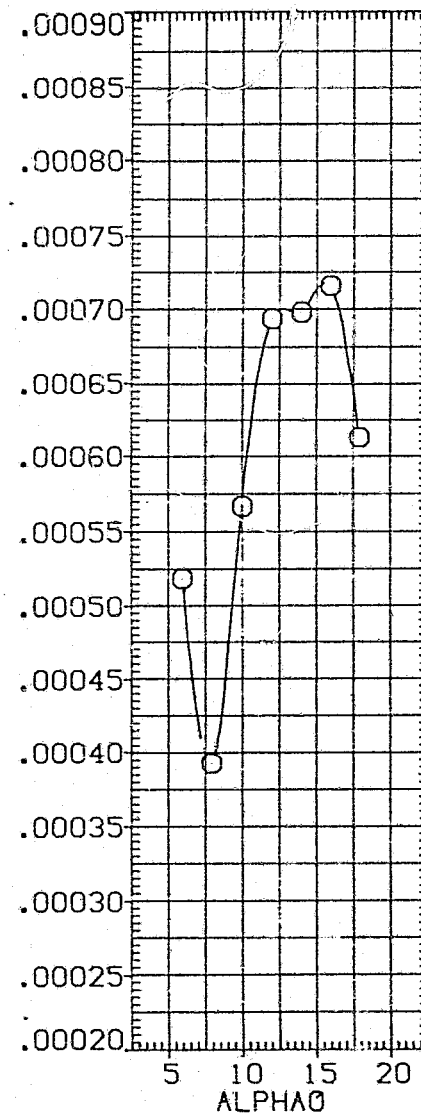
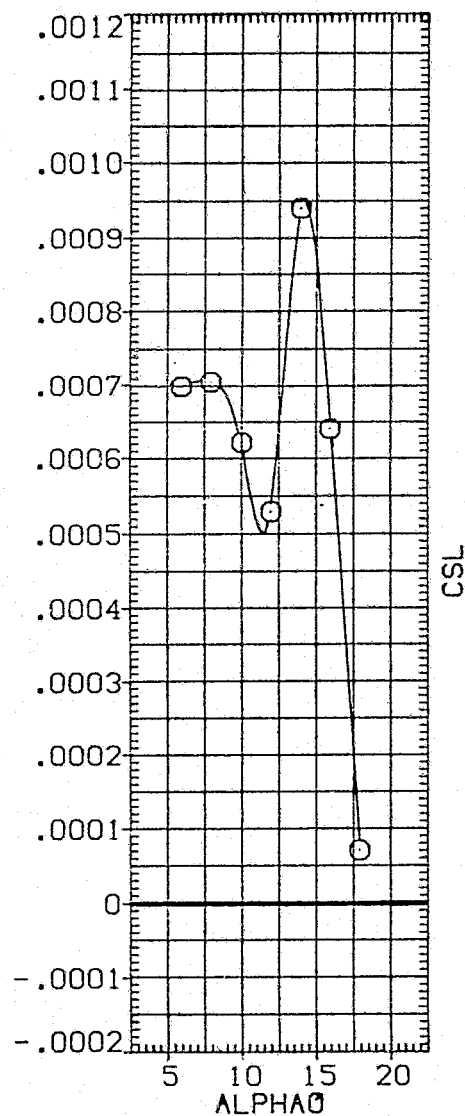
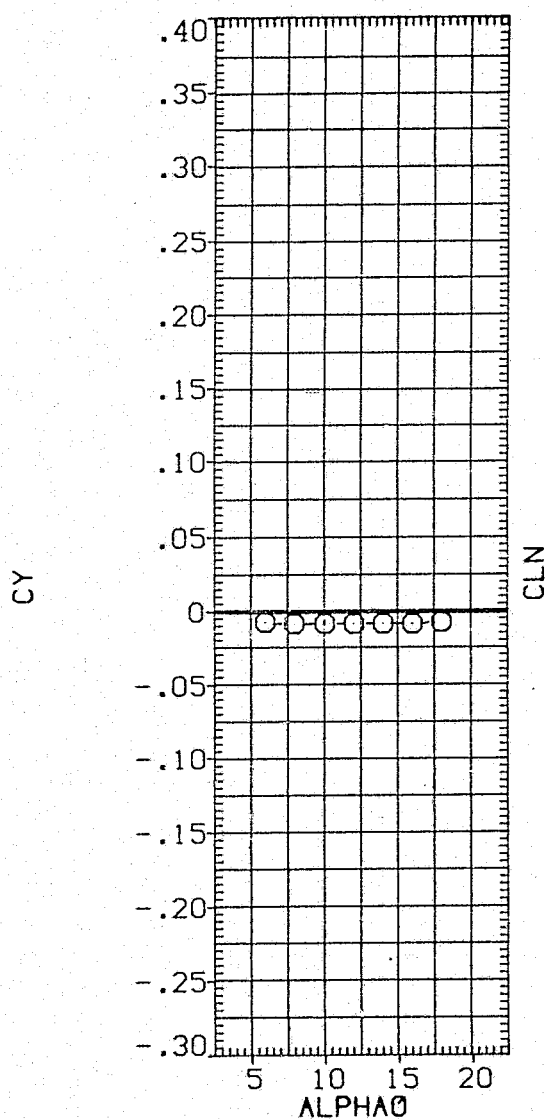


FIG 18 ORBITER ANGLE OF ATTACK EFFECTS ON CARRIER IN PRESENCE OF ORBITER
(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(NGN037) ○ CA20 747/1 01 S1

ORBITER DATA

ALPHAC DX DY DZ
4.000 .000 .000 7.500

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

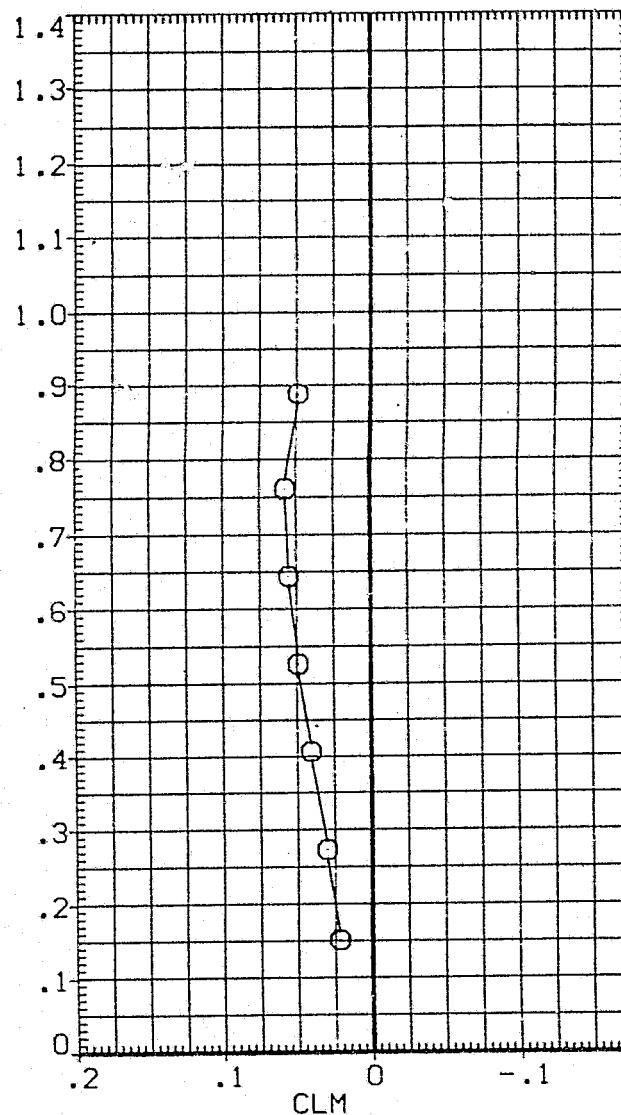
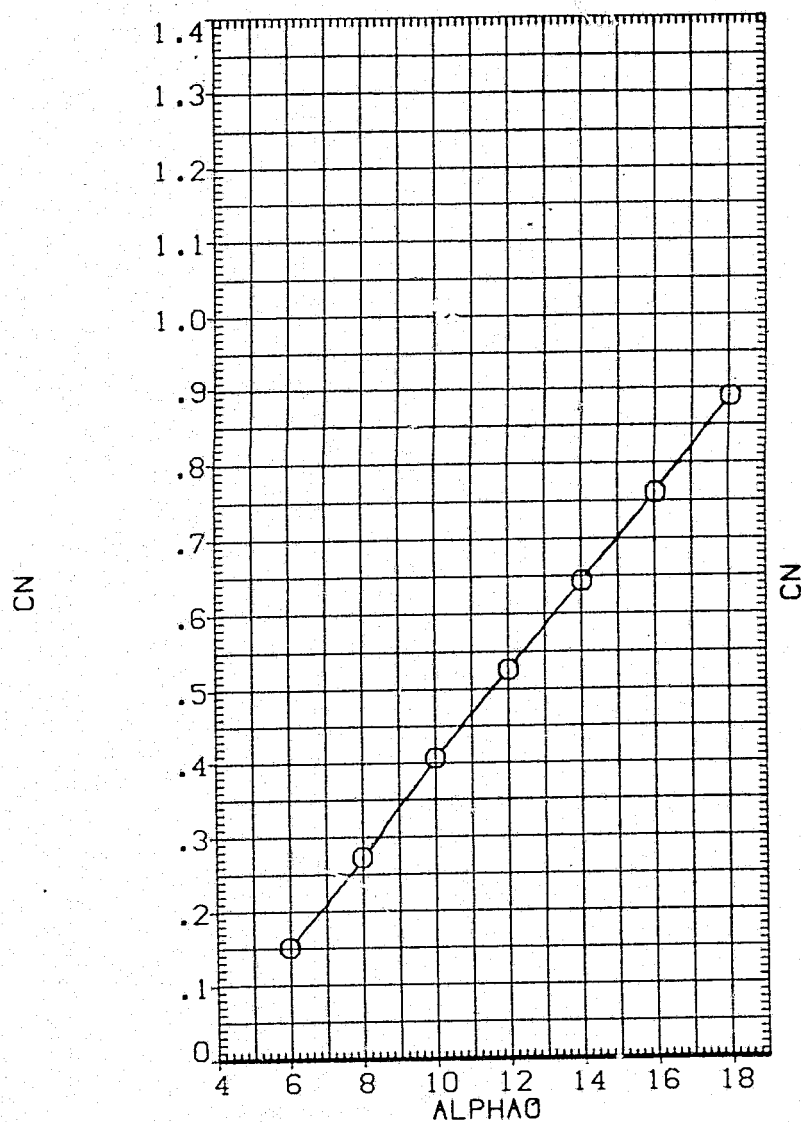


FIG 19 ORBITER ANGLE OF ATTACK EFFECTS ON ORBITER IN PRESENCE OF CARRIER
(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (NGN037) ○ CA20 747/1 01 S1

ORBITER DATA

ALPHA C 4.000
 DX .000
 DY .000
 DZ 7.500

REFERENCE INFORMATION
 SREF 2690.0000 SO.FT.
 LREF 474.8100 IN.
 BREF 936.0000 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

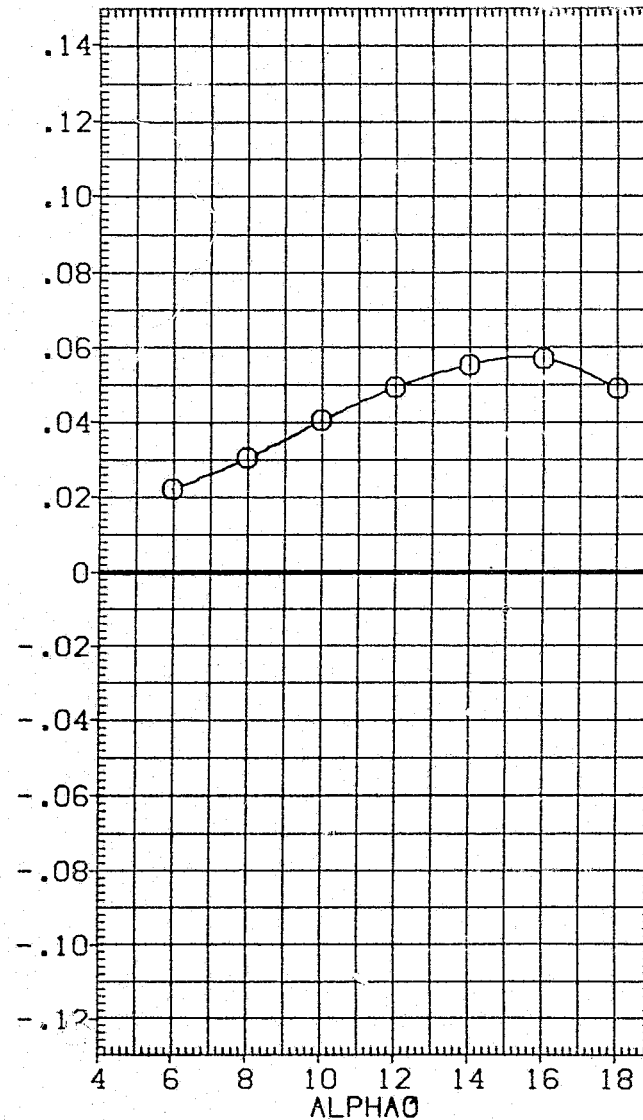
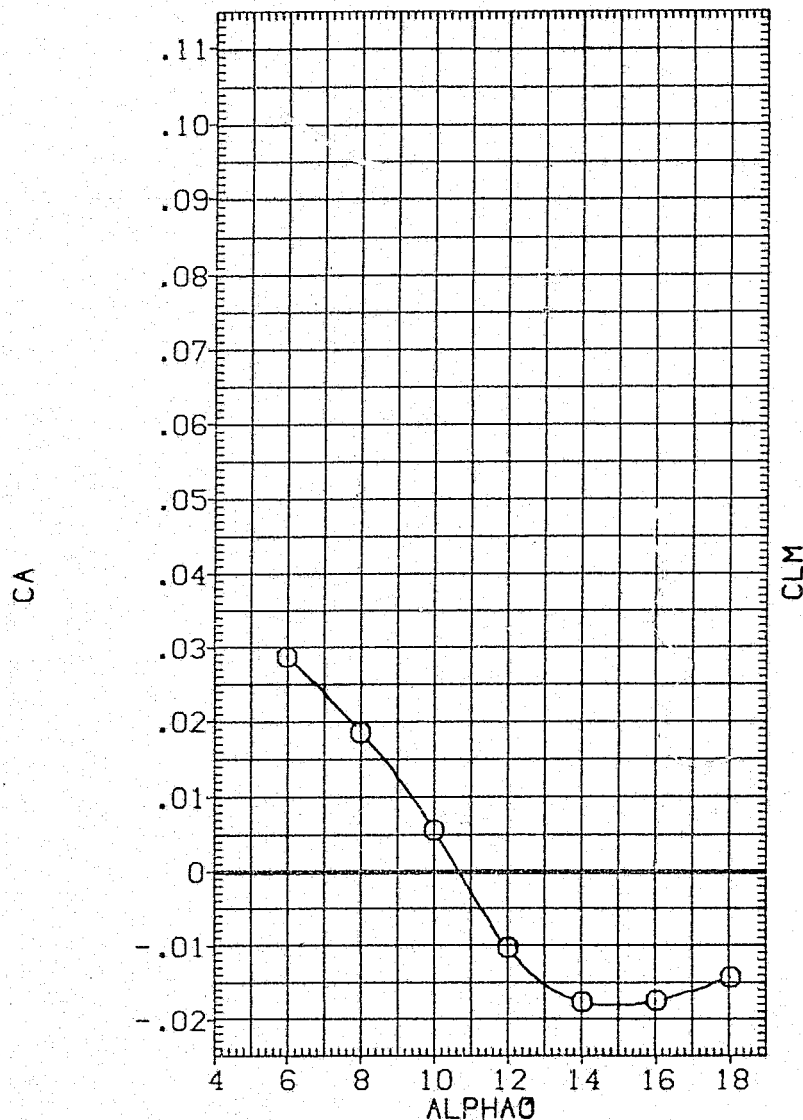


FIG 19 ORBITER ANGLE OF ATTACK EFFECTS ON ORBITER IN PRESENCE OF CARRIER
 (A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(NGN037) ○ CA20 747/1 01 S1

ORBITER DATA ALPHAC 4.000 DX .000 DY .000 DZ 7.500

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

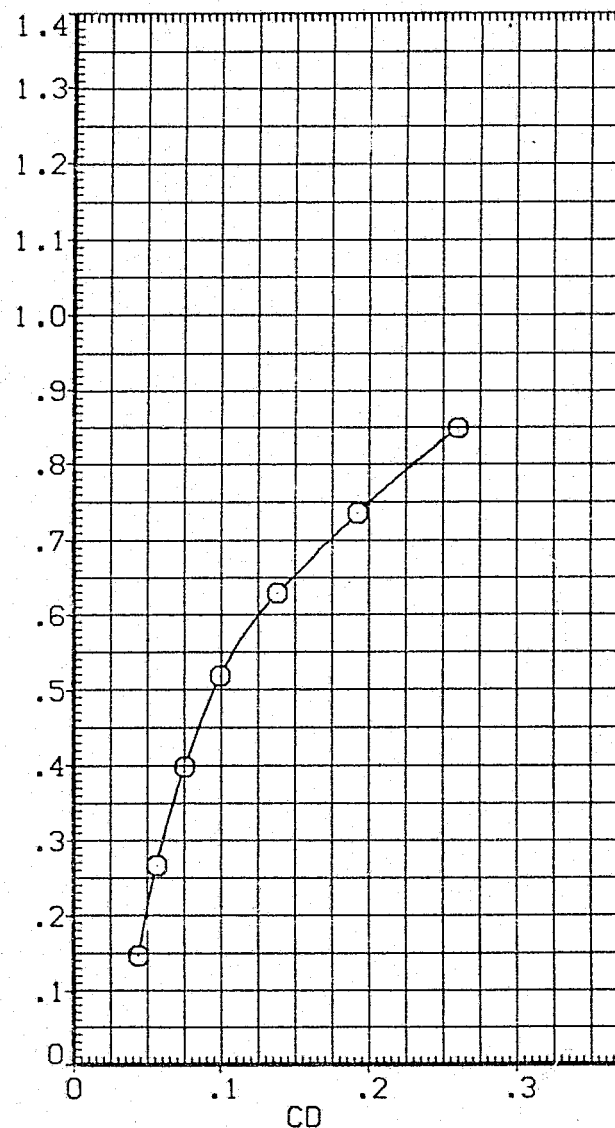
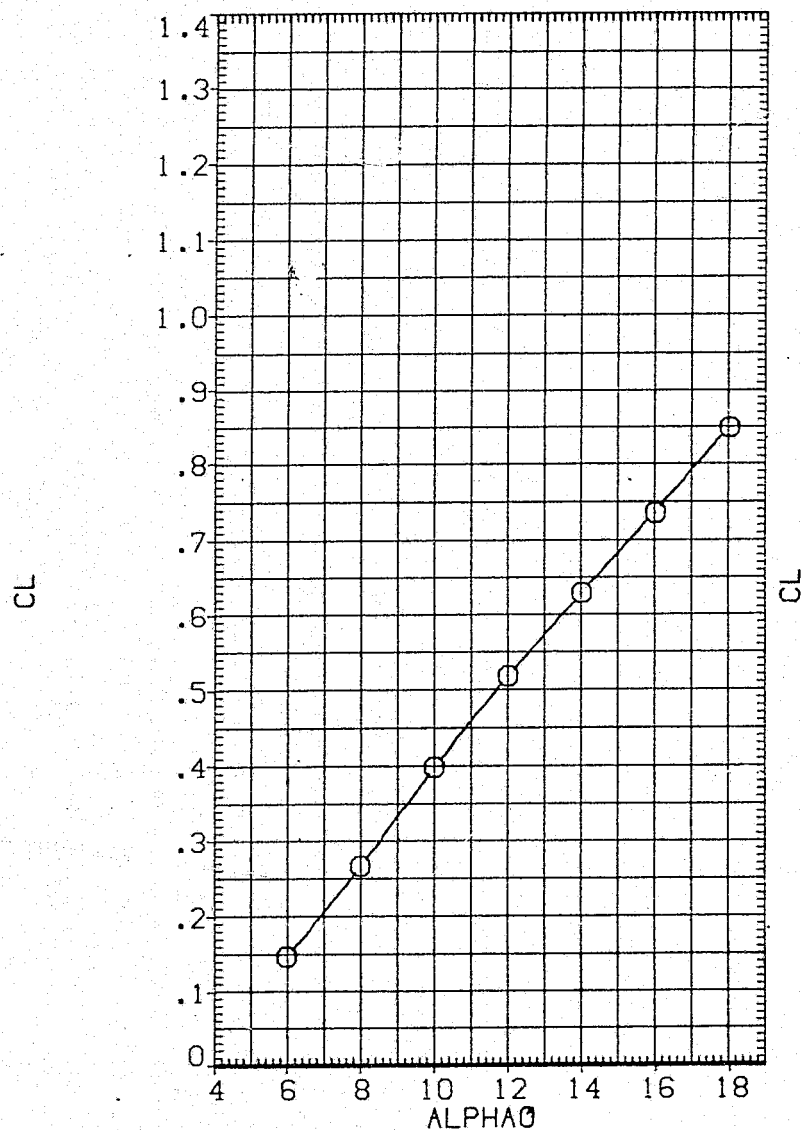


FIG 19 ORBITER ANGLE OF ATTACK EFFECTS ON ORBITER IN PRESENCE OF CARRIER
(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(NGN037) ○ CA20 747/1 01 S1

ORBITER DATA ALPHAC DX DY DZ
 4.000 .000 .000 7.500

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

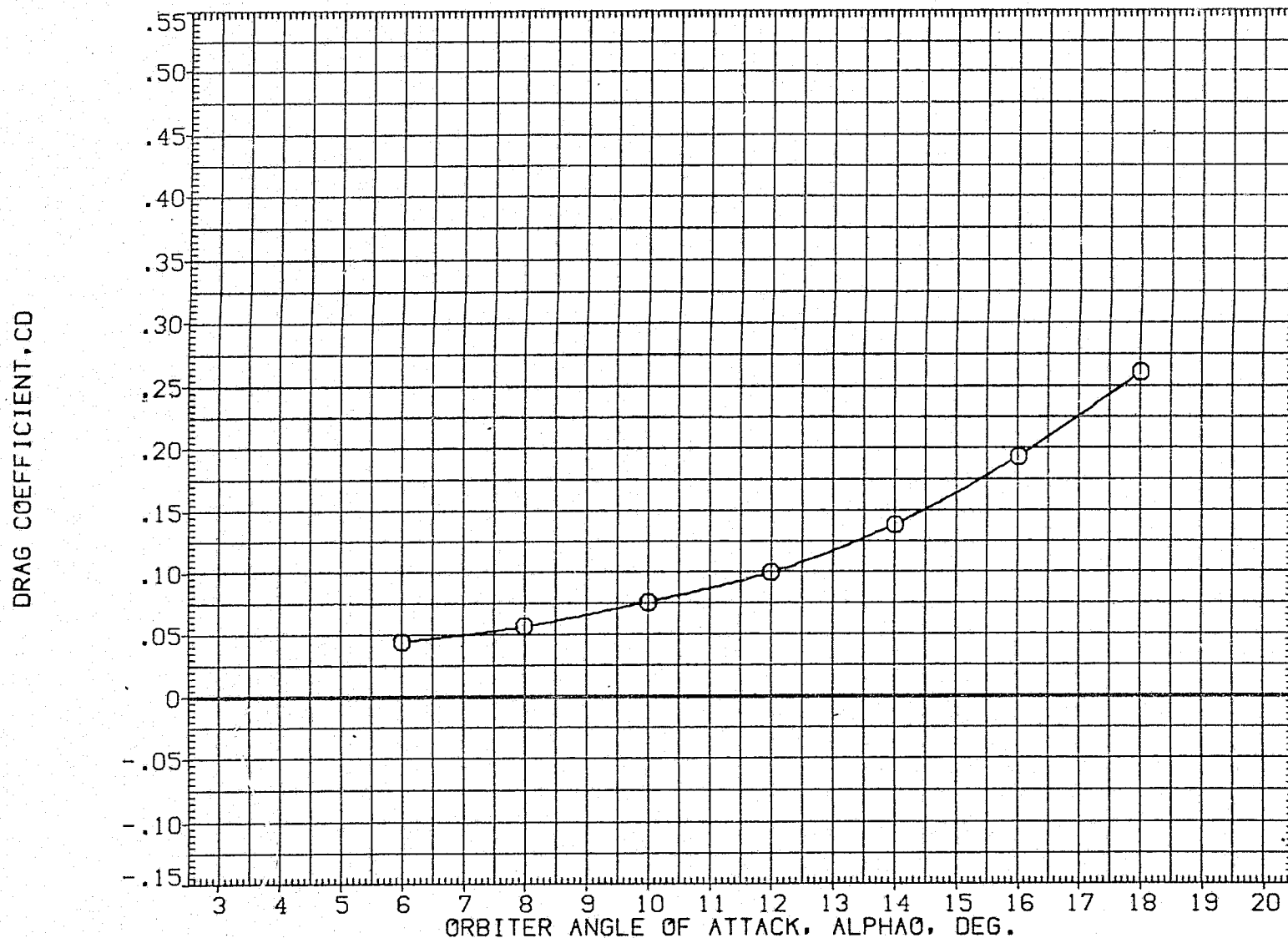


FIG 19 ORBITER ANGLE OF ATTACK EFFECTS ON ORBITER IN PRESENCE OF CARRIER
(A)MACH = .60

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(NGND37) O CA20 747/1 01 S1

ORBITER DATA ALPHAC DX DY DZ
4.000 .000 .000 7.500

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

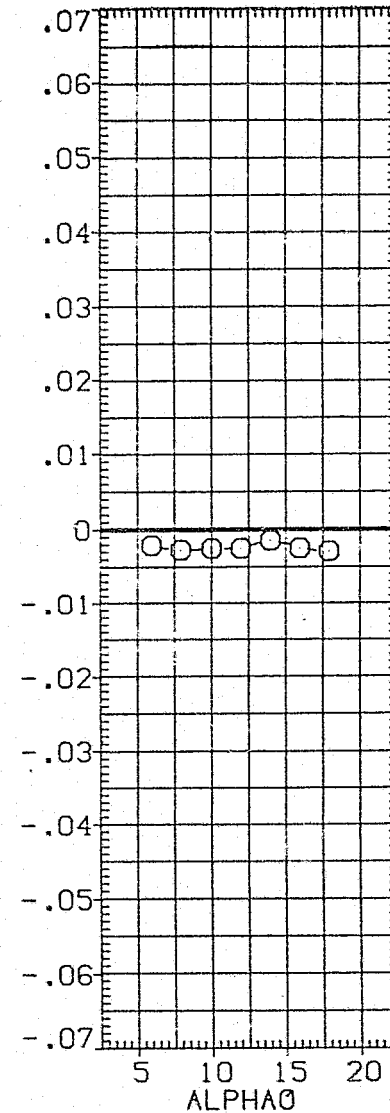
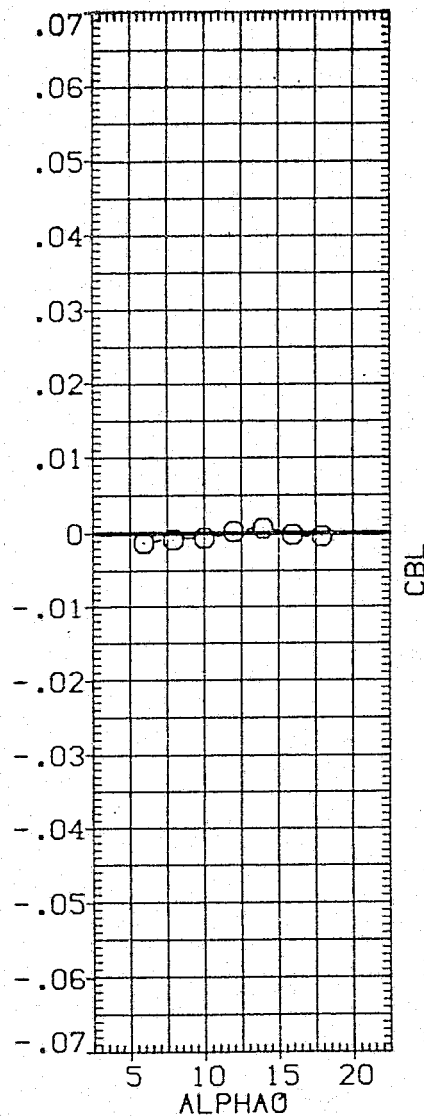
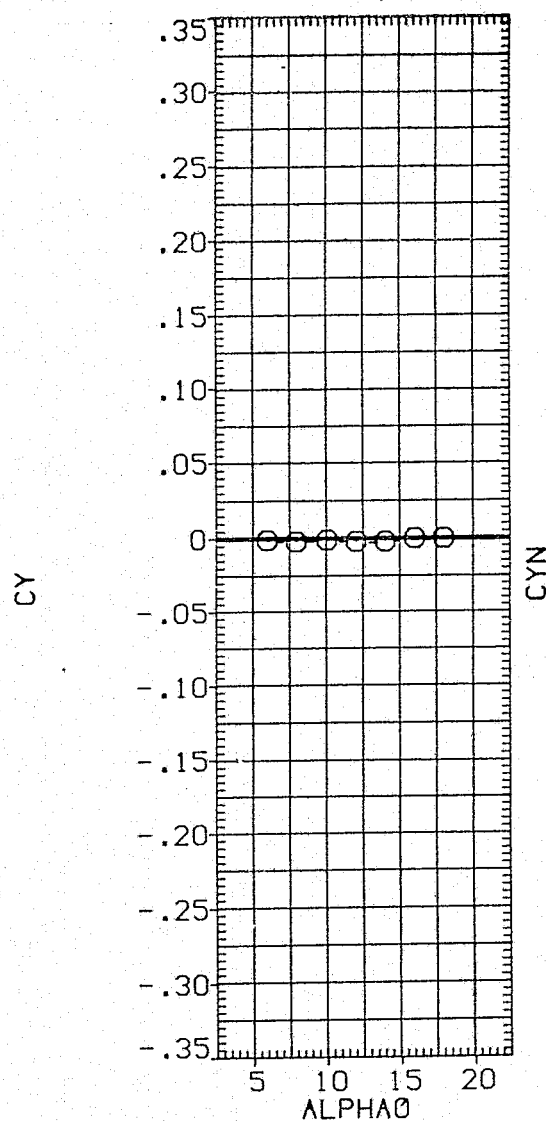


FIG 19 ORBITER ANGLE OF ATTACK EFFECTS ON ORBITER IN PRESENCE OF CARRIER

(A)MACH = .60

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOE1)	CA20 747/1 01 SI AT38 AT39
(SGNOI1)	CA20 747/1 01 SI
(SGNOK1)	DATA NOT AVAILABLE
(SGNOM1)	DATA NOT AVAILABLE

CARRIER DATA
CARRIER DATA

BETAC	BETA0	DX	DY
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.0000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

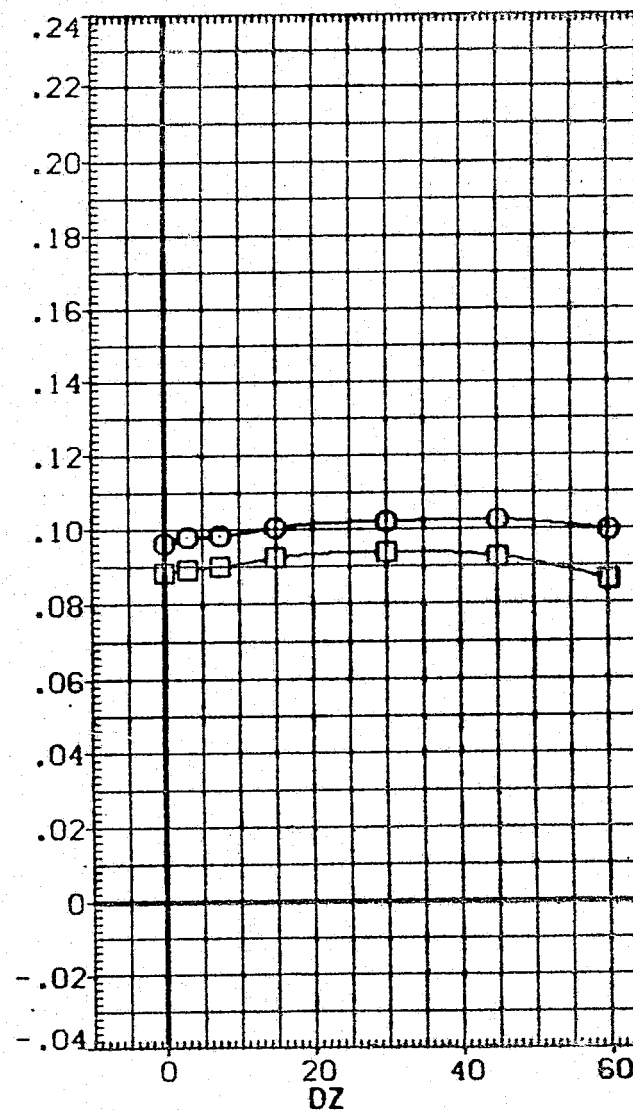
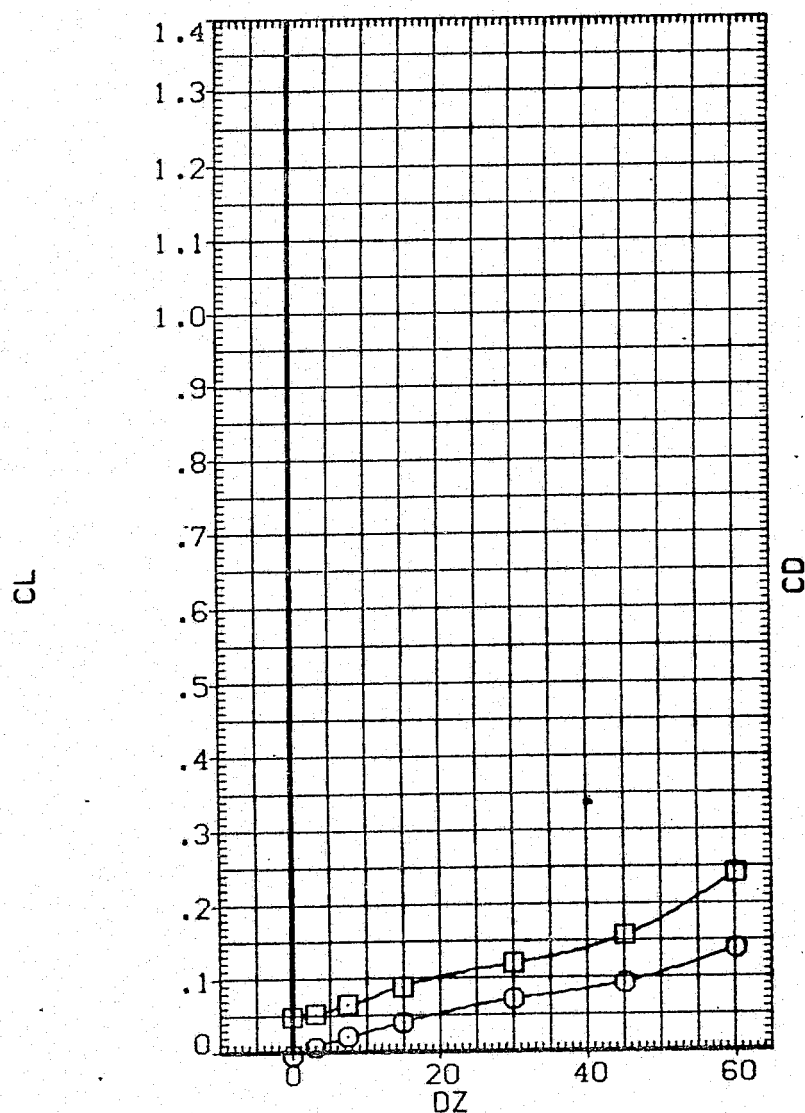


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER
(A) ALPHA0 = 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOE1)	CA20 747/1 01 S1 AT38 AT39
(SGNOI1)	DATA NOT AVAILABLE
(SGNOK1)	CA20 747/1 01 S1
(SGNOM1)	DATA NOT AVAILABLE

CARRIER DATA
CARRIER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	5500.0000	SG.FT.
.000	.000	.000	.000	LREF	327.7800	IN.
.000	.000	.000	.000	BREF	2348.0400	IN.
.000	.000	.000	.000	XMRP	1339.9000	IN.XC
				YMRP	.0000	IN.YC
				ZMRP	190.8000	IN.ZC
				SCALE	.0300	

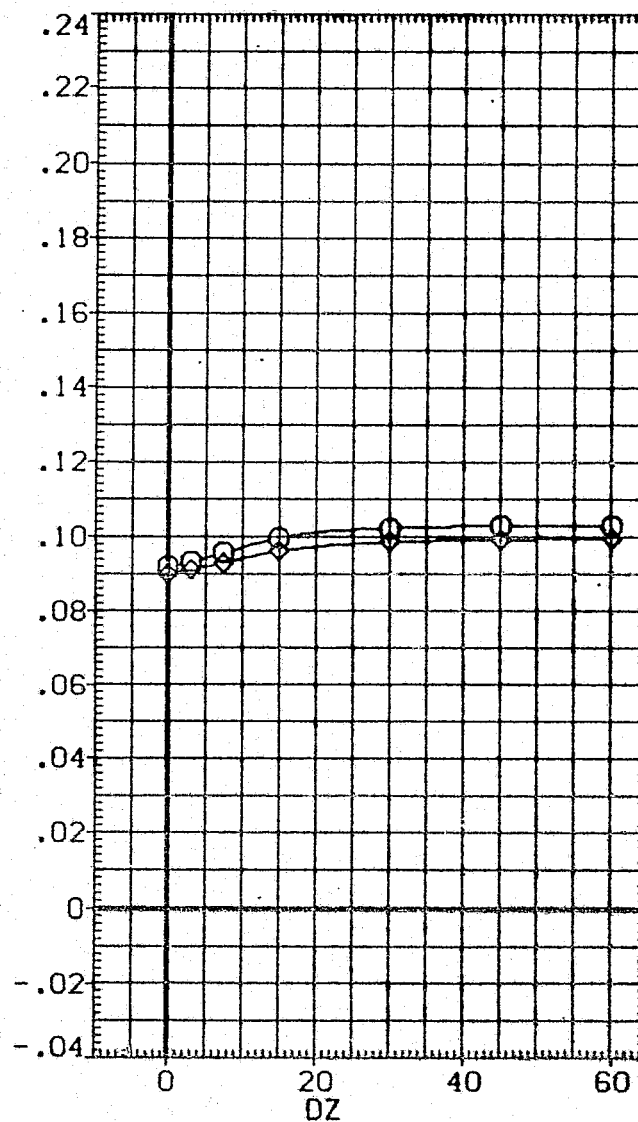
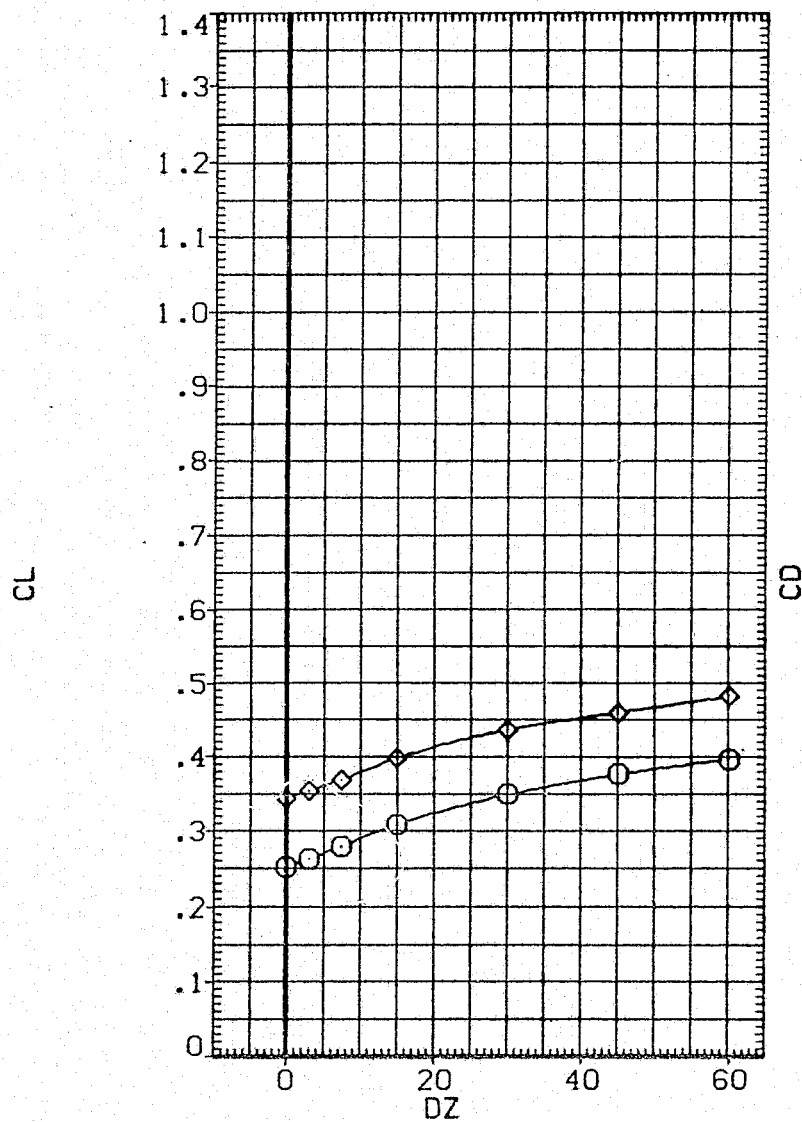


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(B) ALPHA0 = 12.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNDE1)	CA20 747/1 01 S1 AT38 AT39
(SGN011)	DATA NOT AVAILABLE
(SGN0K1)	DATA NOT AVAILABLE
(SGNOM1)	CA20 747/1 01 S1

CARRIER DATA

CARRIER DATA

BETAC	BETAO	DX	DY
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	180.8000	IN.ZC
SCALE	.0300	

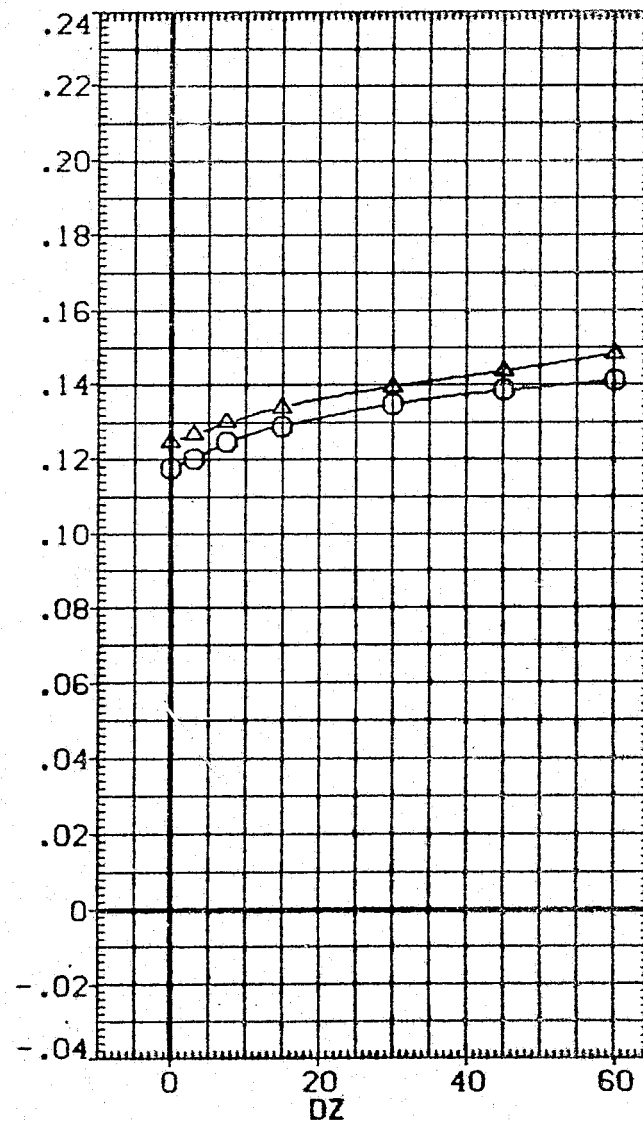
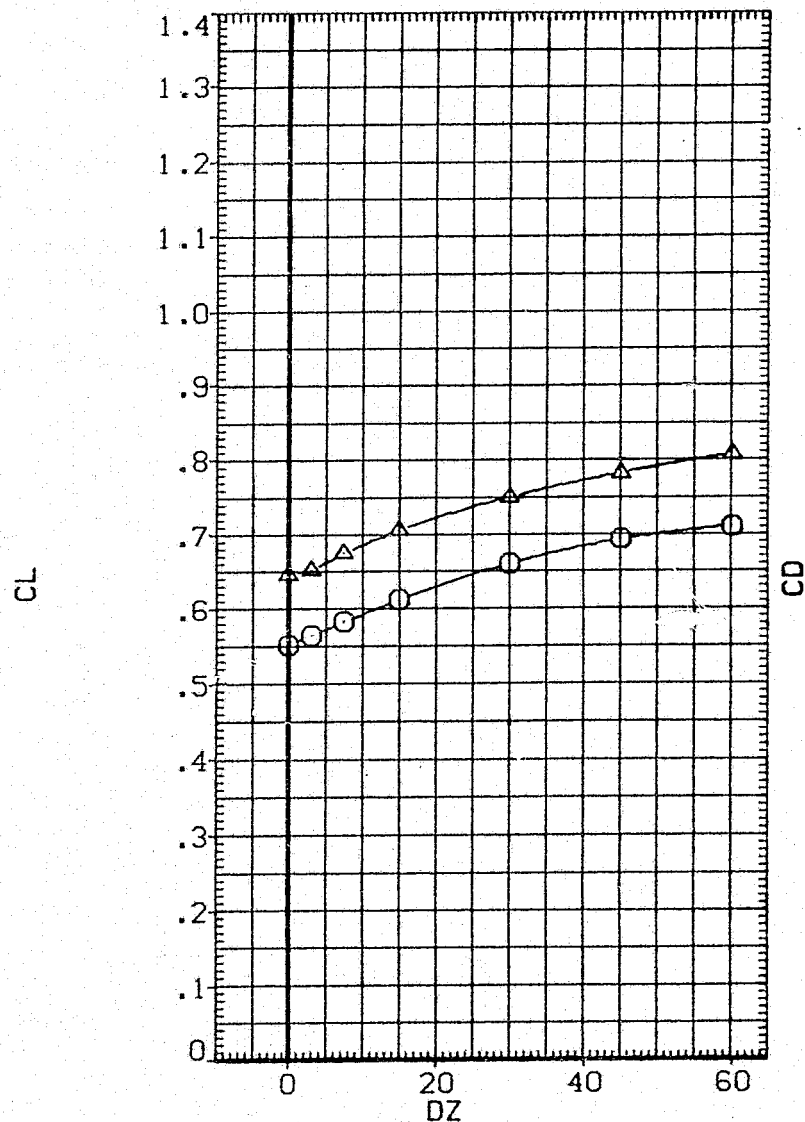


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER
(C)ALPHA0= 16.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOE1)	CA20 747/1 01 S1 AT38 AT39
(SGNOI1)	CA20 747/1 01 S1
(SGNOK1)	DATA NOT AVAILABLE
(SGNOM1)	DATA NOT AVAILABLE

CARRIER DATA
CARRIER DATA

BETAC	BETA0	DX	DY
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

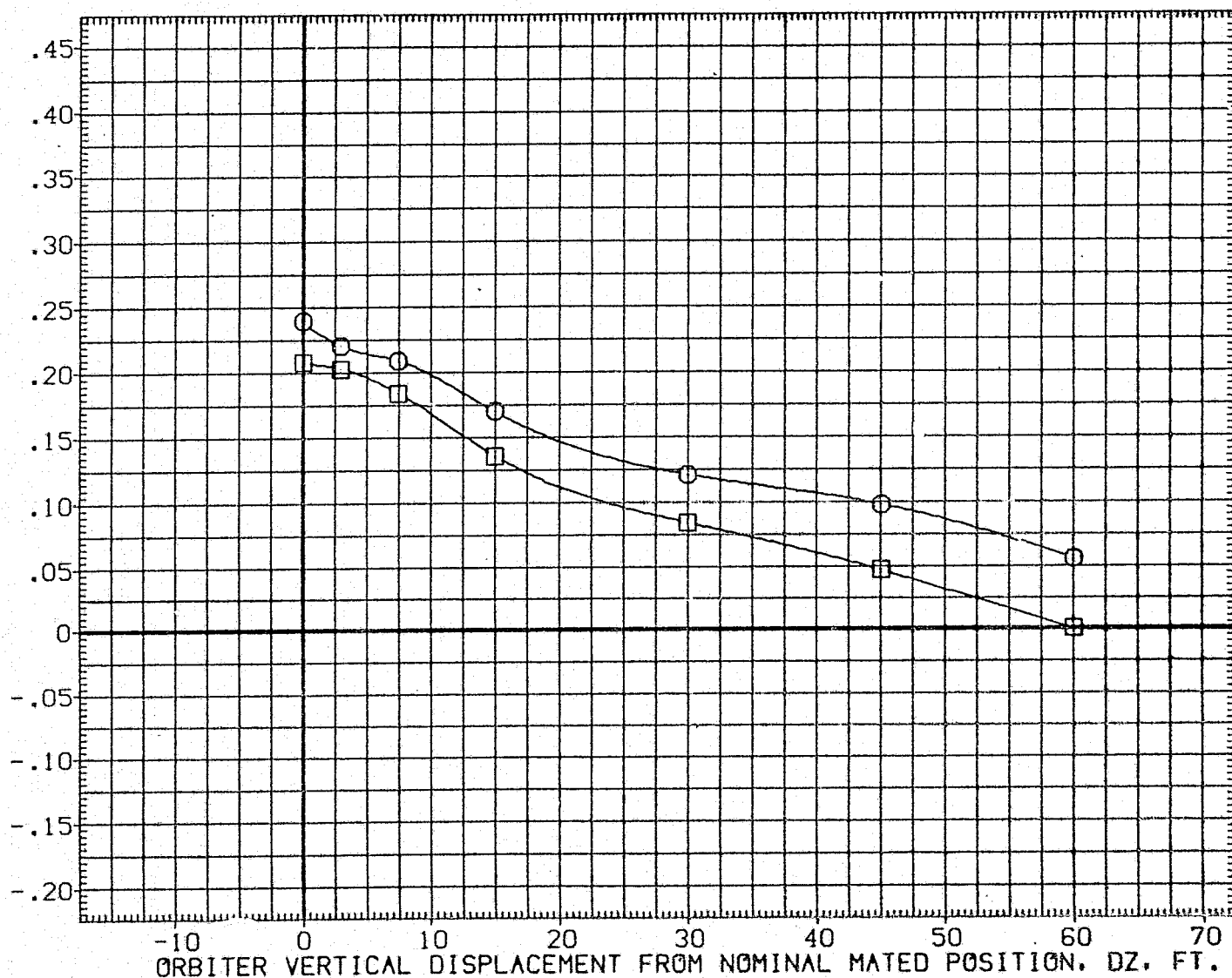


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(A) ALPHA0= 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOE1)	CA20 747/1 01 S1 AT38 AT39
(SGNOI1)	DATA NOT AVAILABLE
(SGNOK1)	CA20 747/1 01 S1
(SGNOM1)	DATA NOT AVAILABLE

CARRIER DATA
BETAC
BETAO
DX
DY

.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.YC
YMRP	.0000	IN.YC
ZMRP	190.9900	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, C_{LM}

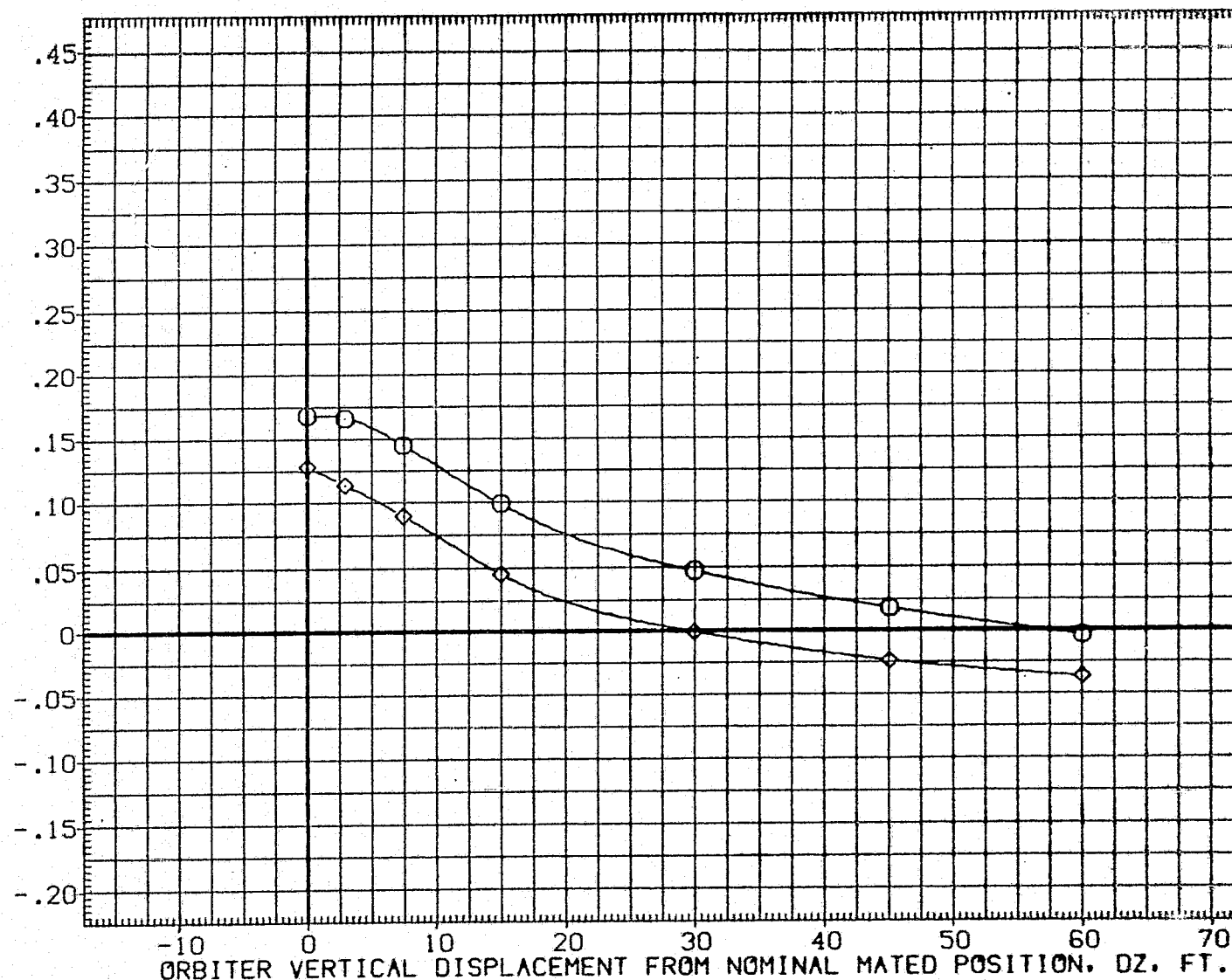


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(B) ALPHA₀ = 12.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CARRIER DATA	BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
(SGNOE1)	CA20 747/1 01 S1 AT38 AT39	CARRIER DATA	.000	.000	.000	.000	SREF	5500.0000	50.FT.
(SGNOI1)	DATA NOT AVAILABLE		.000	.000	.000	.000	LREF	327.7800	IN.
(SGNOK1)	DATA NOT AVAILABLE		.000	.000	.000	.000	BREF	2348.0400	IN.
(SGNOM1)	CA20 747/1 01 S1	CARRIER DATA	.000	.000	.000	.000	XMRP	1339.9000	IN.XC
							YMRP	.0000	IN.YC
							ZMRP	190.8000	IN.ZC
							SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

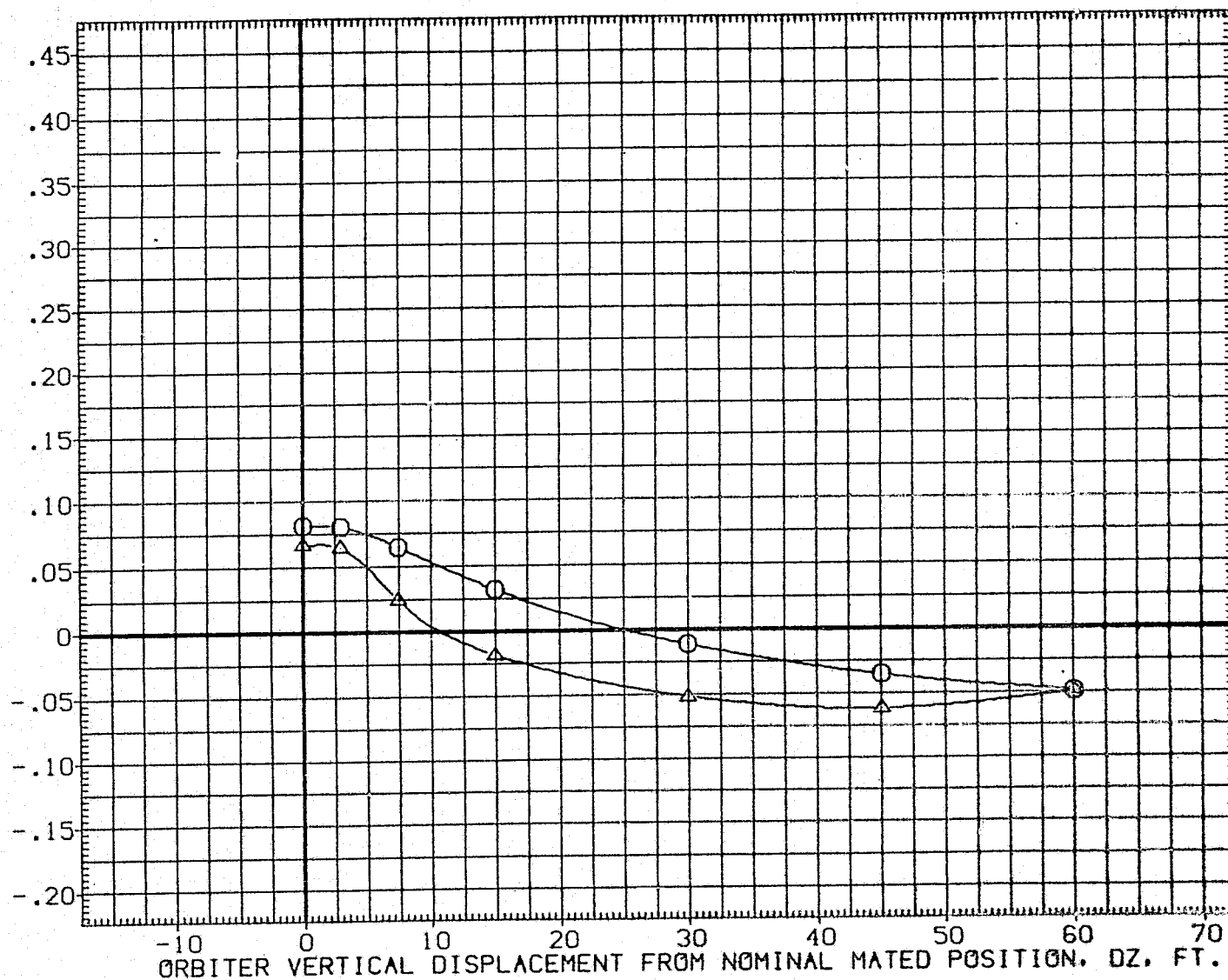


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER
(C)ALPHA0= 16.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOE1)	CA20 747/1 01 S1 AT38 AT39
(SGNOT1)	CA20 747/1 01 S1
(SGNOK1)	DATA NOT AVAILABLE
(SGNOM1)	DATA NOT AVAILABLE

CARRIER DATA
CARRIER DATA

BETAC	BETA0	DX	DY
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	59.FT.
LREF	327.7800	IN.
BREF	2348.5400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.0000	IN.ZC
SCALE	.0300	

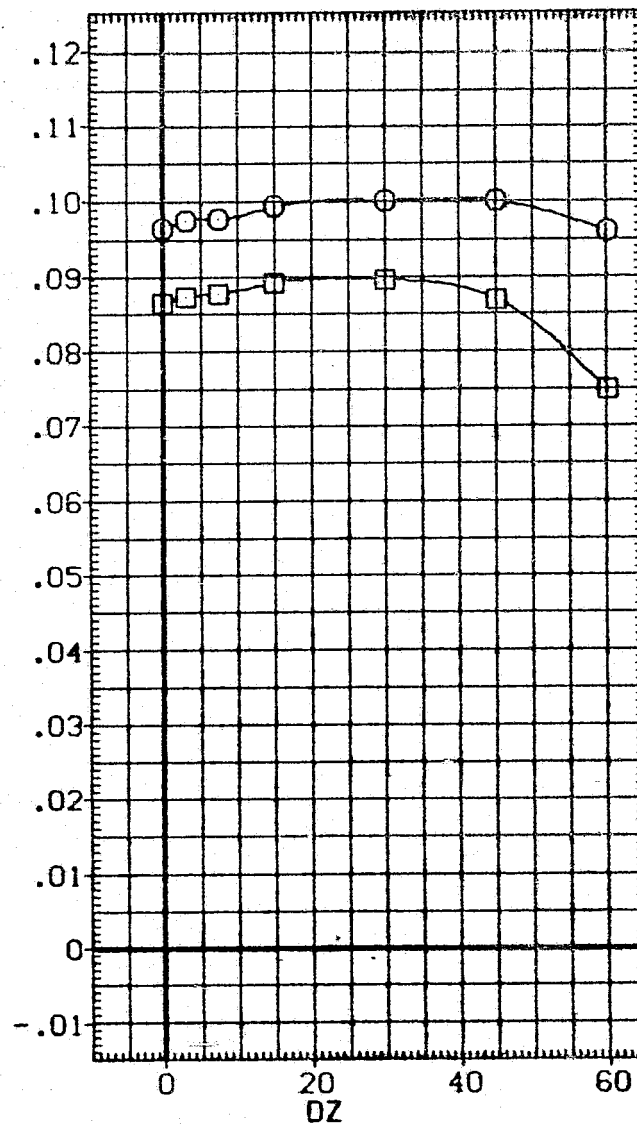
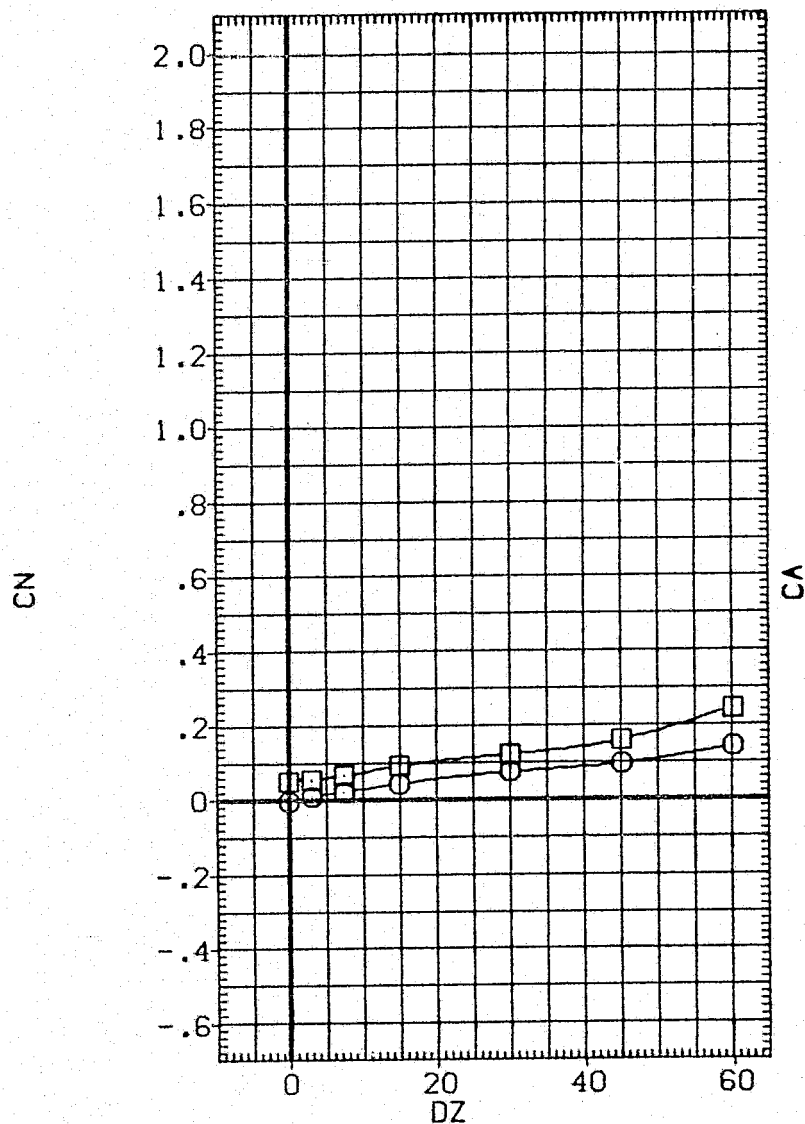


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(A) ALPHA0 = 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	
(SGNOE1)	CA20 747/1 01 S1 AT38 AT39	CARRIER DATA
(SGNOI1)	DATA NOT AVAILABLE	
(SGNOK1)	CA20 747/1 01 S1	CARRIER DATA
(SGNOM1)	DATA NOT AVAILABLE	

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	5500.0000	50.FT.
.000	.000	.000	.000	LREF	327.7800	IN.
.000	.000	.000	.000	BREF	2348.0400	IN.
.000	.000	.000	.000	XMRP	1339.9000	IN.XC
				YMRP	.0000	IN.YC
				ZMRP	190.8000	IN.ZC
				SCALE	.0300	

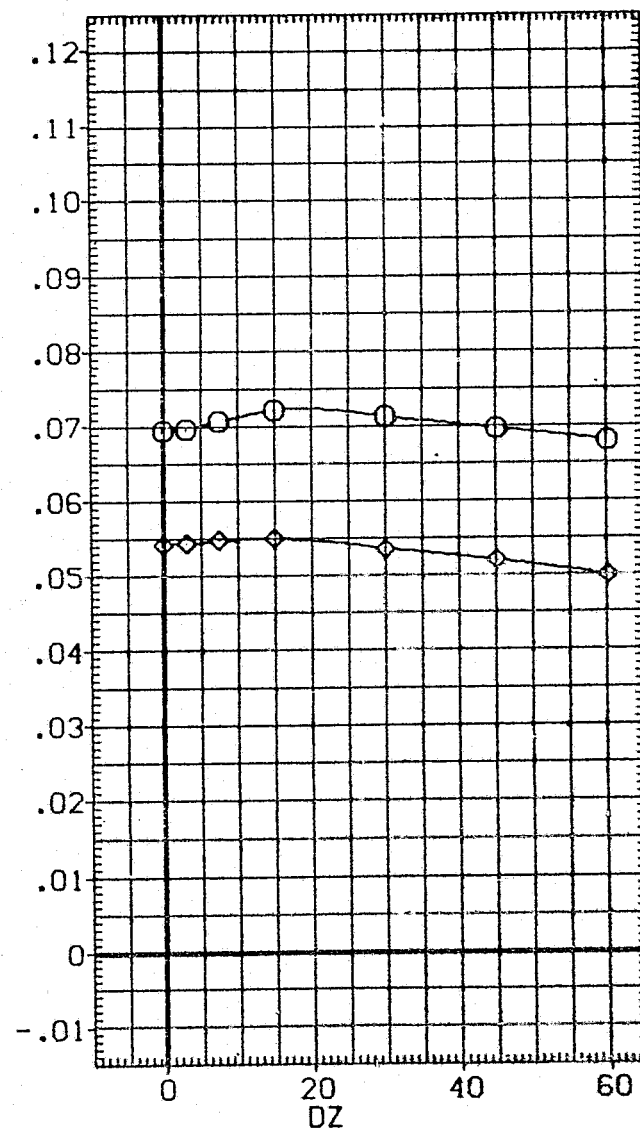
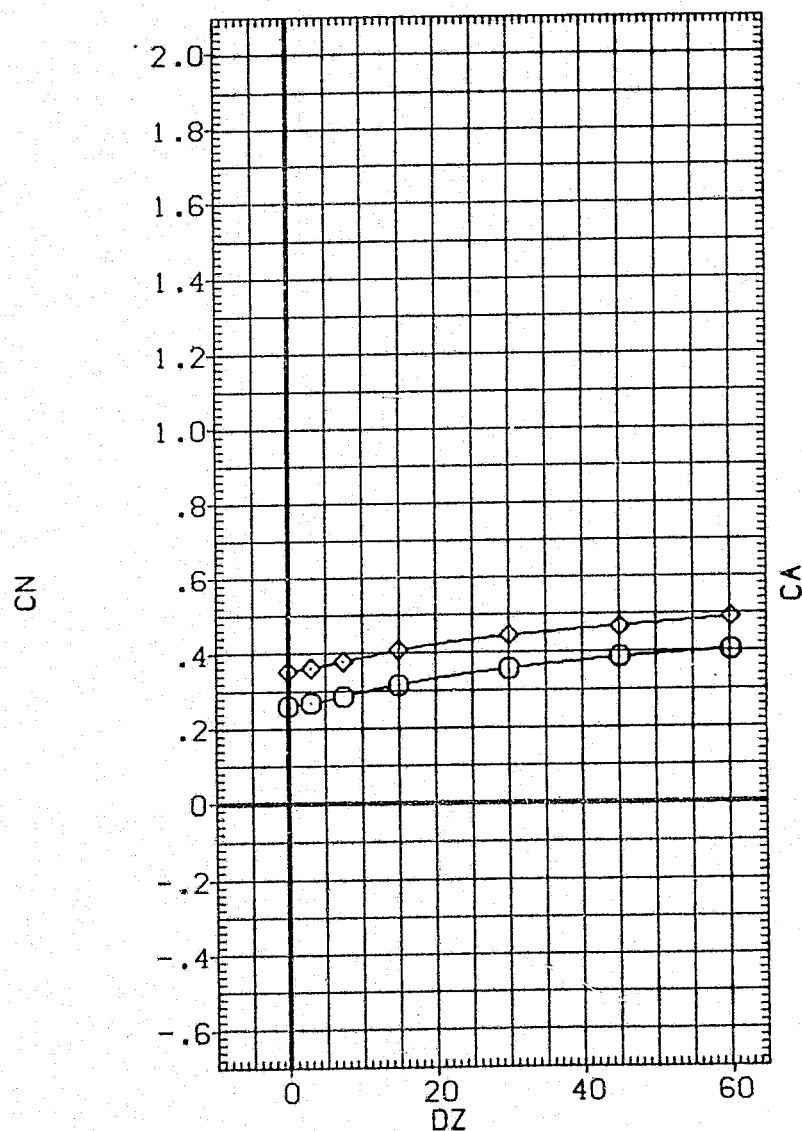


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER
 (B) ALPHA0= 12.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOE1)	CA20 747/1 01 S1 AT38 AT39
(SGNOI1)	DATA NOT AVAILABLE
(SGNOK1)	DATA NOT AVAILABLE
(SGNQMI)	CA20 747/1 01 S1

CARRIER DATA

CARRIER DATA

BETAC	BETAO	DX	DY
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION

	VALUE	UNIT
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.0300	IN.XC
YMRP	.0000	IN.YC
ZMRP	150.0000	IN.ZC
SCALE	.0300	

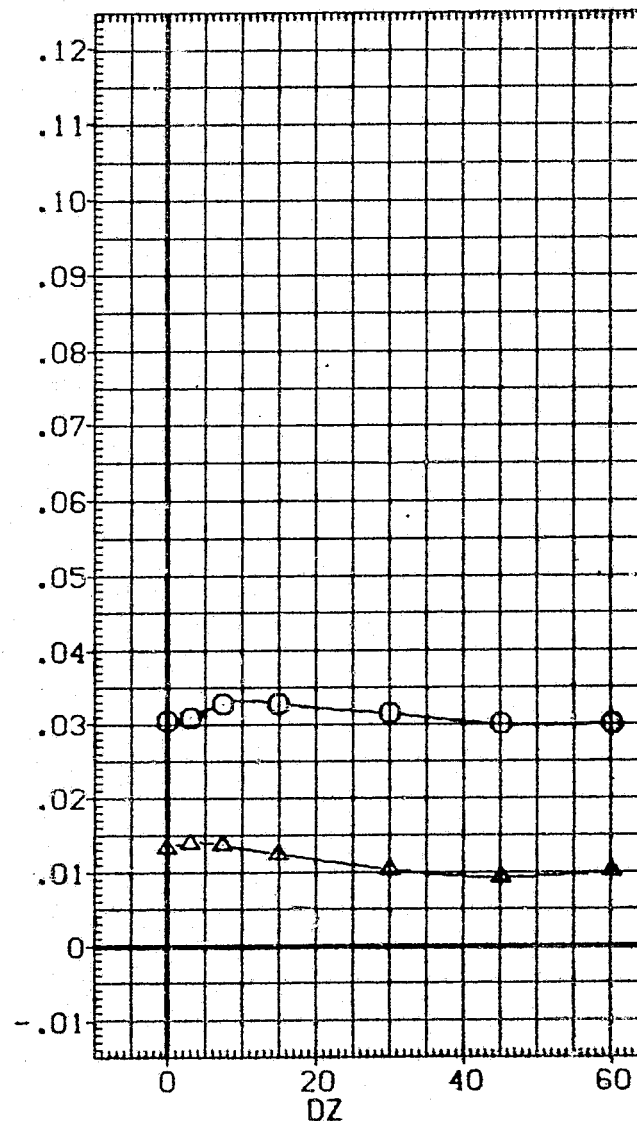
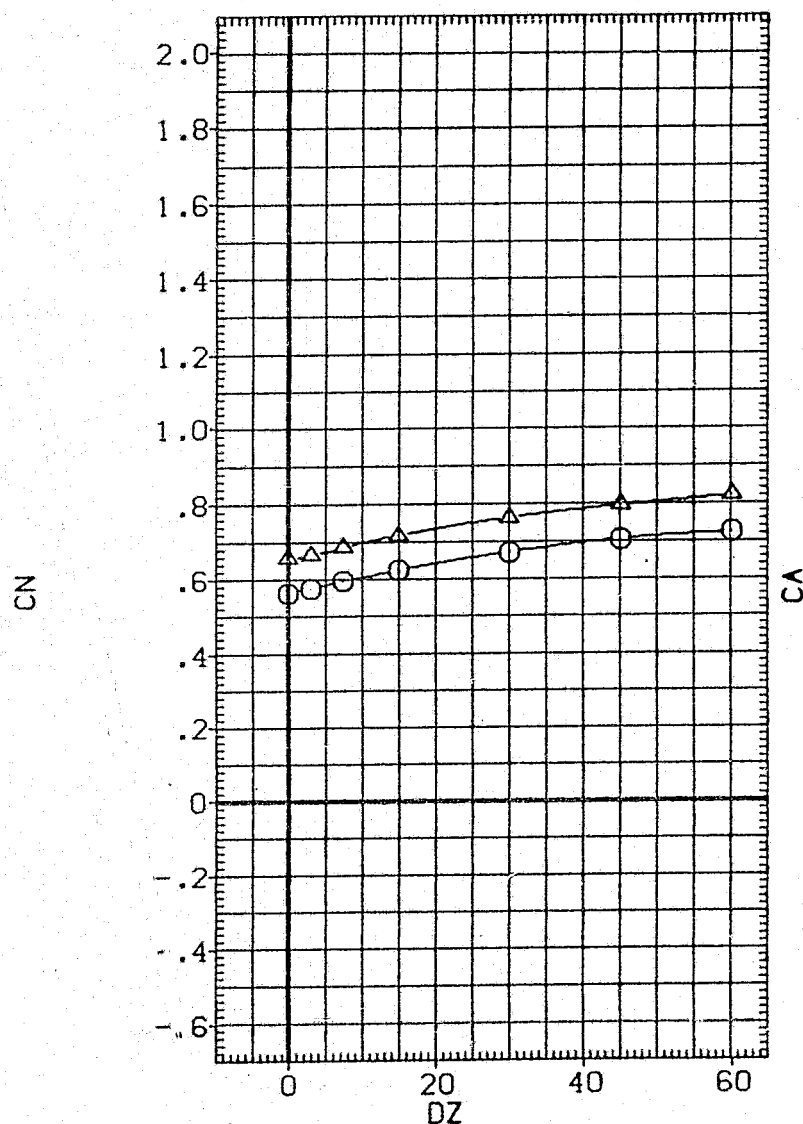


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER
(C) ALPHA = 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (WGNR45) □ CA20 747/1 01 S1 AT38 AT39 CARRIER DATA
 (WGNR46) □ DATA NOT AVAILABLE
 (WGNR47) ◇ DATA NOT AVAILABLE

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	5500.0000	50.FT.
.000	.030	.000	.000	LREF	327.7800	IN.
.000	.000	.000	.000	BREF	2348.0400	IN.
				XHRP	1339.9000	IN.XC
				YMRP	.0000	IN.YC
				ZMRP	190.8000	IN.ZC
				SCALE	.0300	

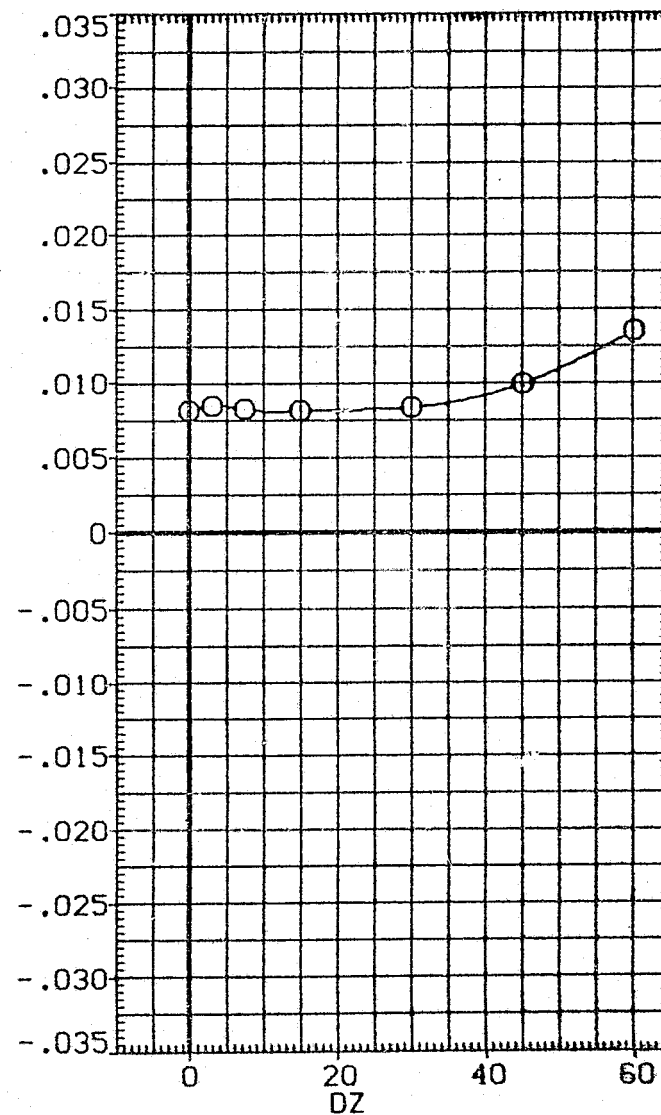
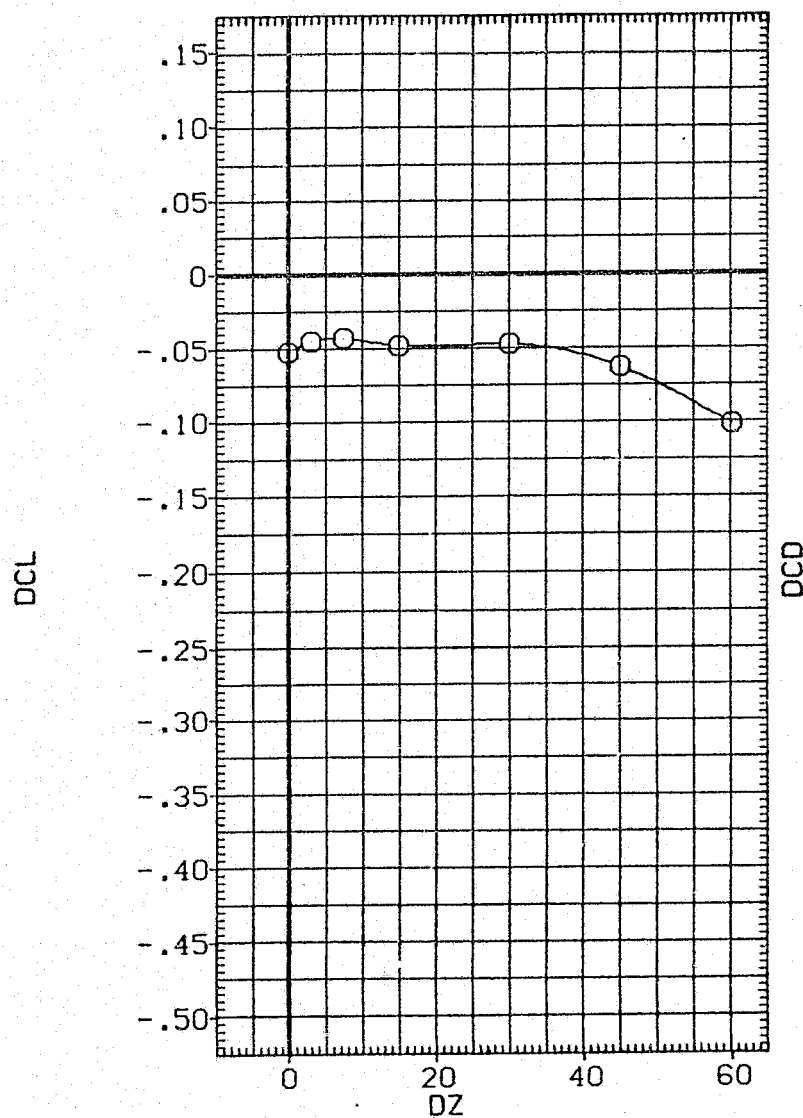


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(A) ALPHA0 = 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	
(WGNR45)	DATA NOT AVAILABLE	
(WGNR46)	CA20 747/1 01 S1 AT38 AT39	CARRIER DATA
(WGNR47)	DATA NOT AVAILABLE	

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	5500.0000	50.FT.
.000	.000	.000	.000	LREF	327.7800	IN.
.000	.000	.000	.000	BREF	2348.0400	IN.
				XMRP	1339.0000	IN.XC
				YMRP	.0000	IN.YC
				ZMRP	190.8000	IN.ZC
				SCALE	.0300	

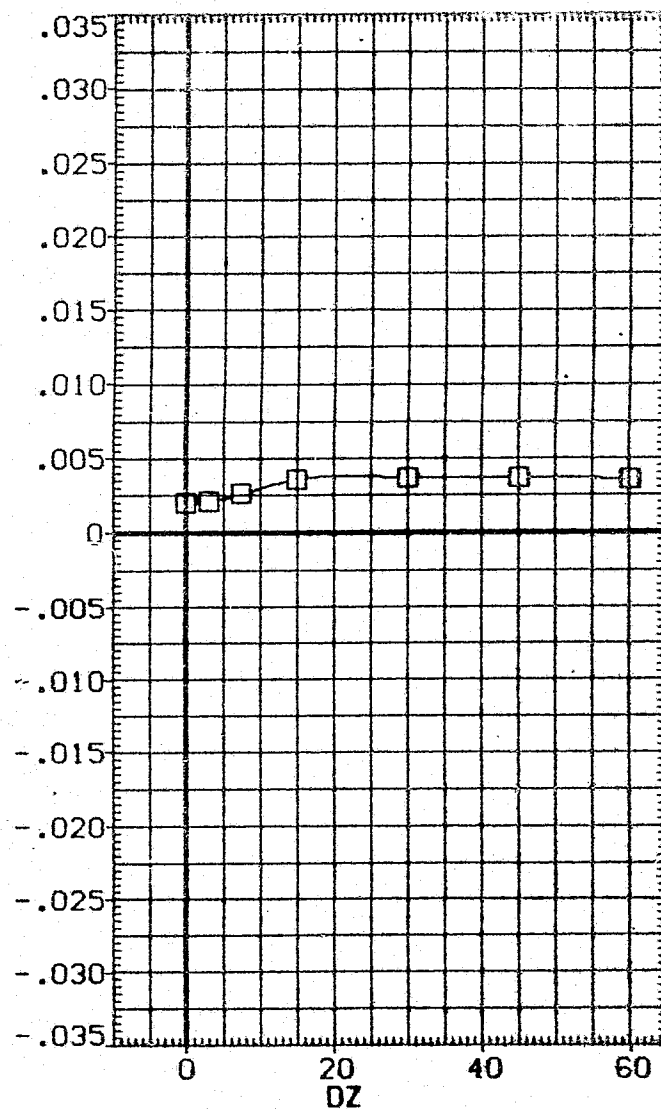
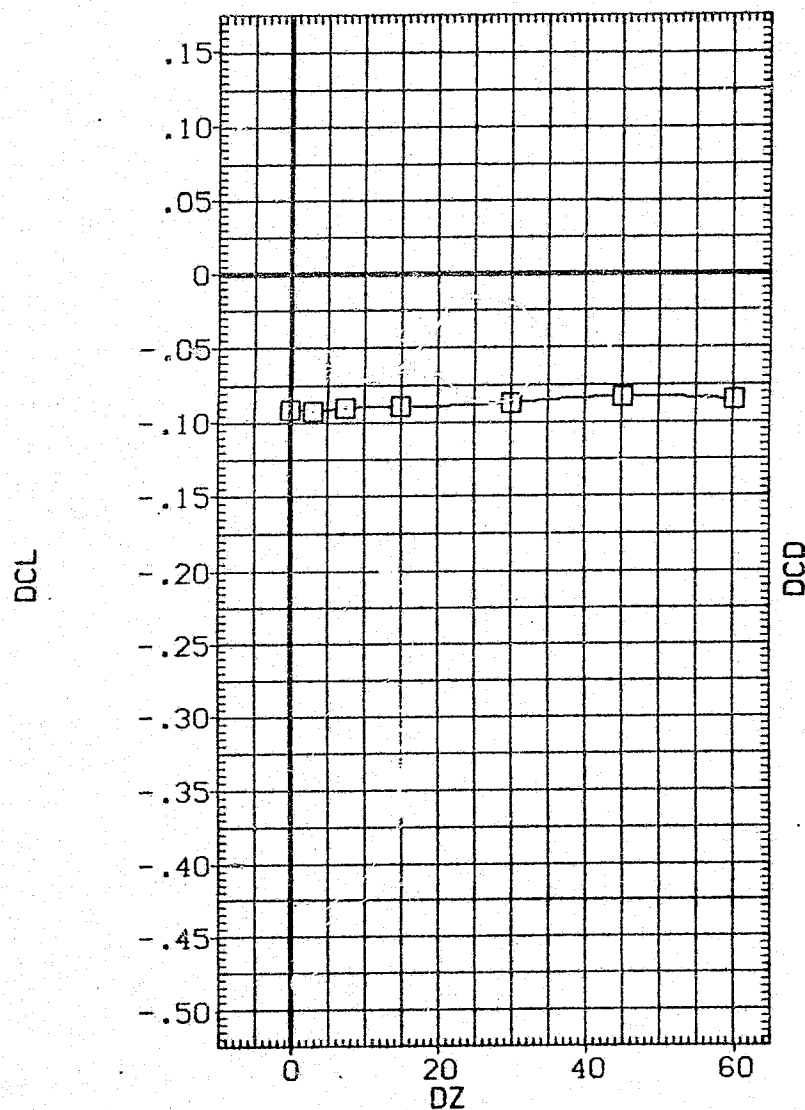


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER
 (B) ALPHA0 = 12.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(WGNR45)	DATA NOT AVAILABLE
(WGNR46)	DATA NOT AVAILABLE
(WGNR47)	CA20 747/1 01 S1 AT38 AT39 CARRIER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION	
.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
.000	.000	.000	.000	LREF	327.7800 IN.
.000	.000	.000	.000	BREF	2348.0400 IN.
				XMRP	1339.9000 IN.XC
				YMRP	.0000 IN.YC
				ZMRP	190.8000 IN.ZC
				SCALE	.0300

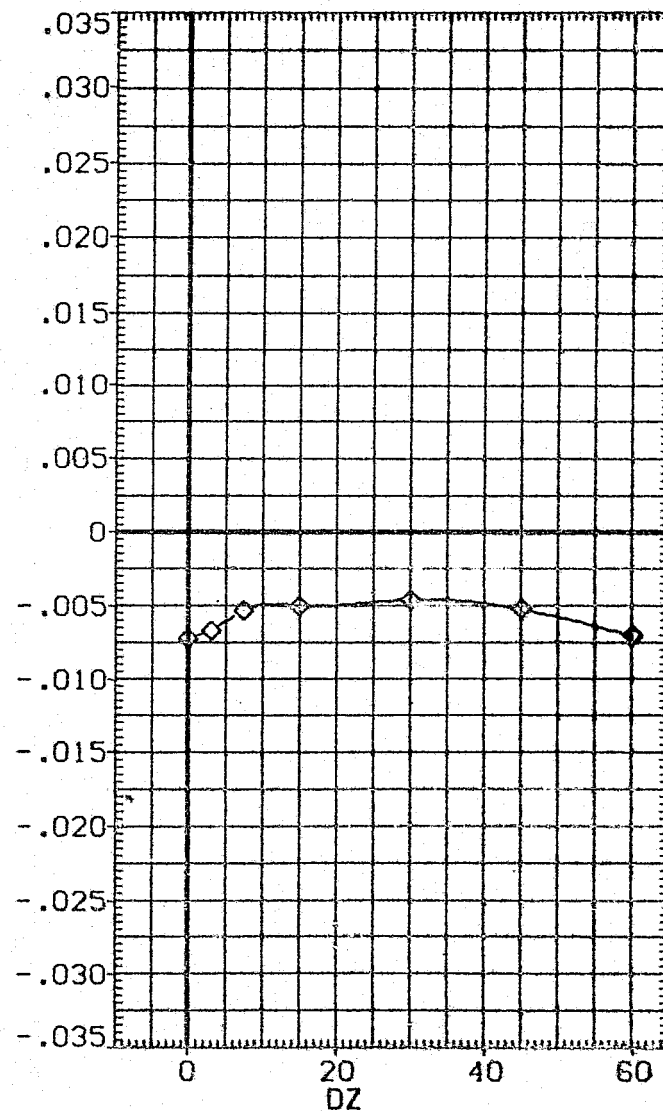
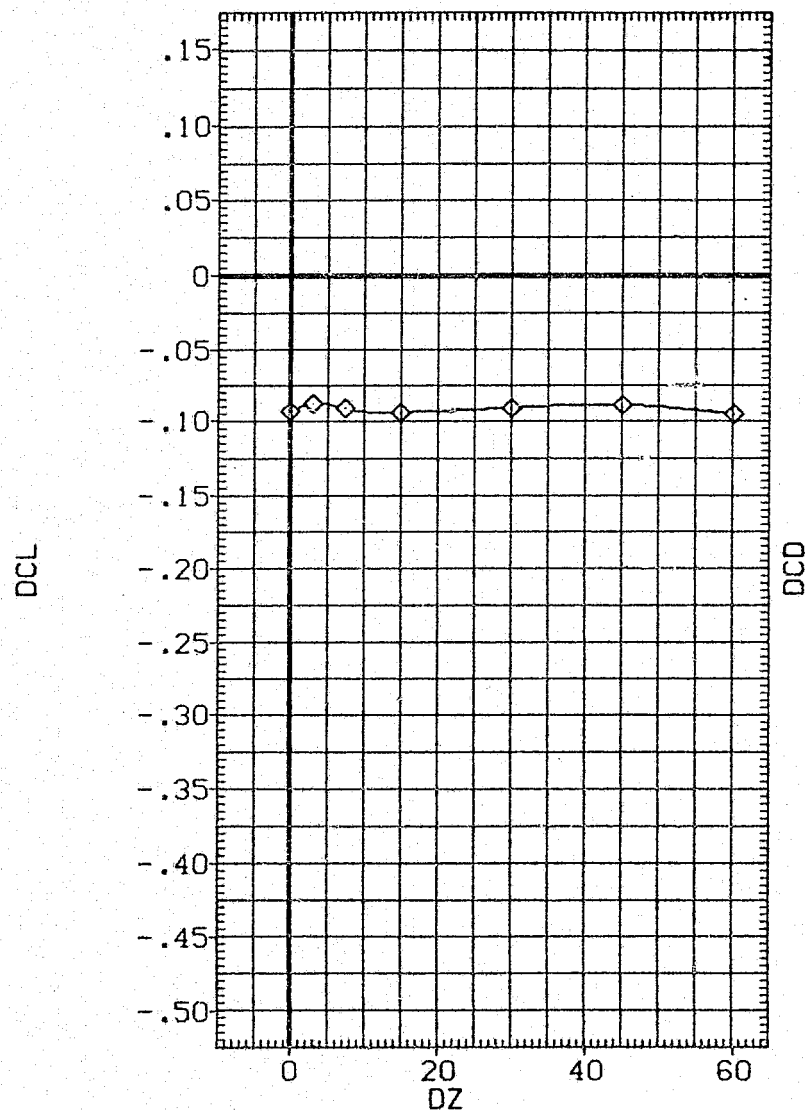


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(C)ALPHA0= 16.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(WGNR45)	CA20 747/1 01 S1 AT38 AT39
(WGNR46)	DATA NOT AVAILABLE
(WGNR47)	DATA NOT AVAILABLE

CARRIER DATA

BETAC	BETA0	DX	DY
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	18.700	IN.YC
ZMRP	190.0000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

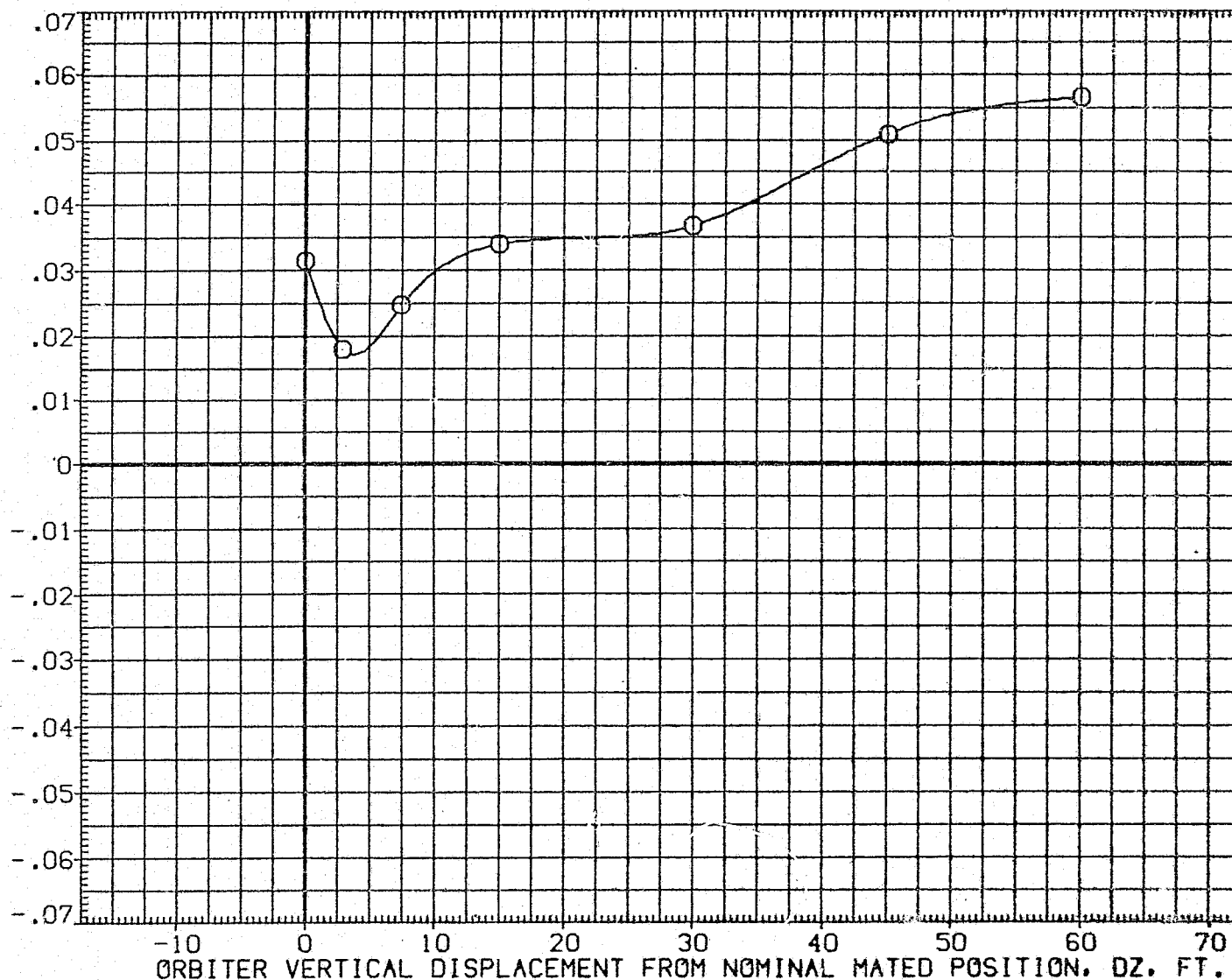


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(A) ALPHA0 = 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(WGNR45) DATA NOT AVAILABLE

(WGNR46) CA20 747/1 01 S1 AT38 AT39

(WGNR47) DATA NOT AVAILABLE

CARRIER DATA

BETAC	BETA0	DX	DY
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

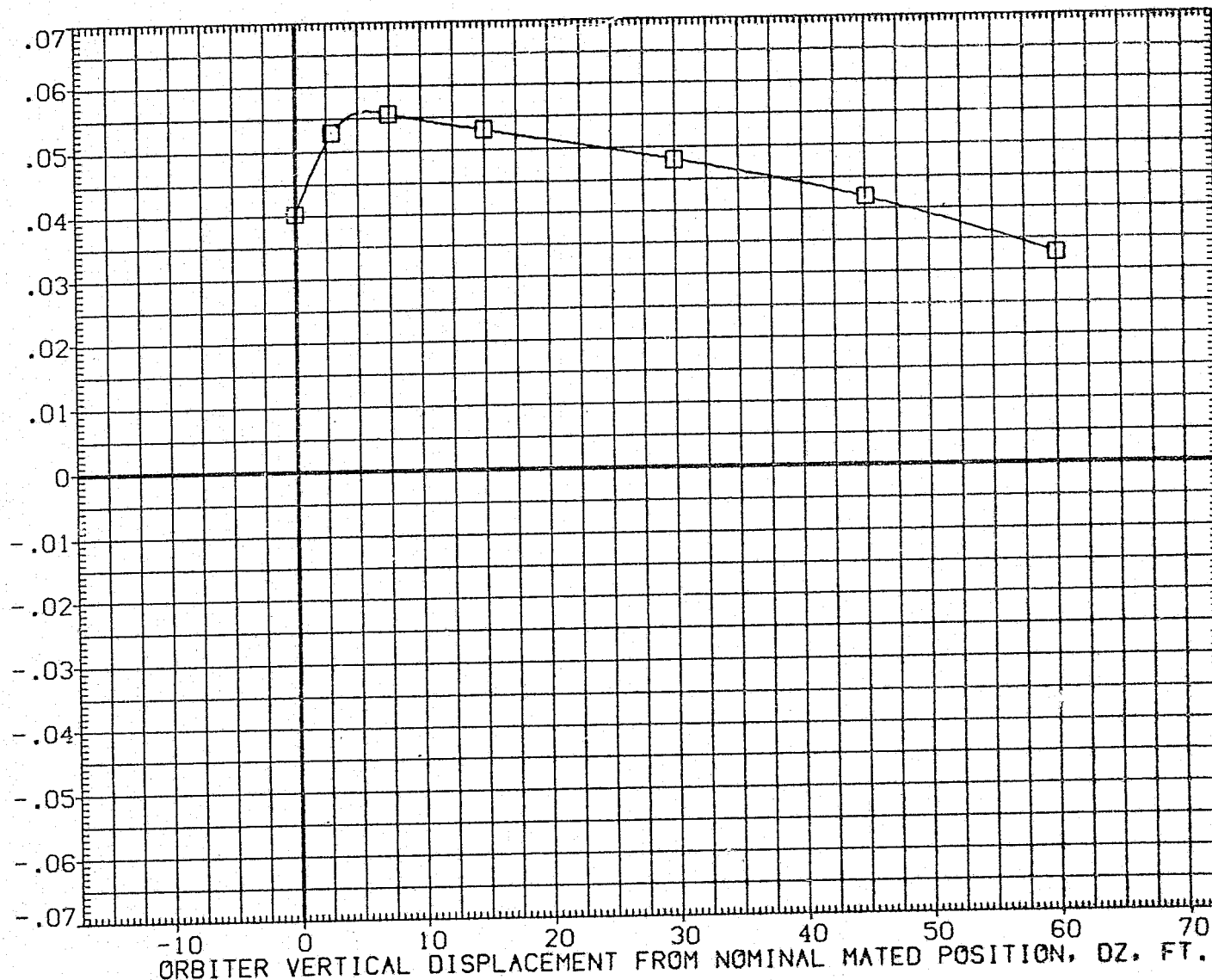


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(B)ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(WGNR45) DATA NOT AVAILABLE
(WGNR46) DATA NOT AVAILABLE
(WGNR47) CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

BETAC .000
BETA0 .000
DX .000
DY .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0600 IN.YC
ZMRP 190.6000 IN.ZC
SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

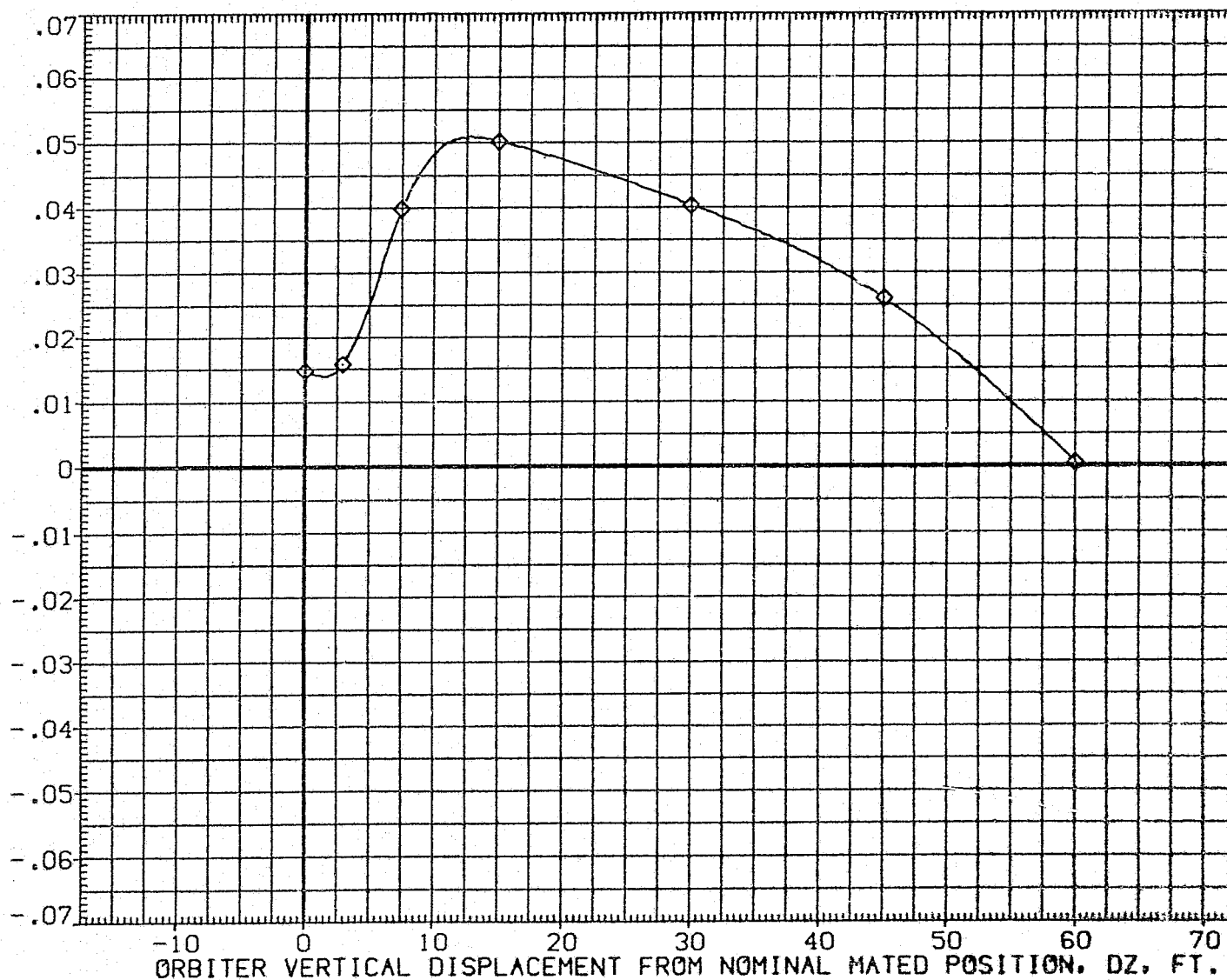


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION CARRIER DATA

(WGNR45) CA20 747/1 01 S1 AT38 AT39

(WGNR46) DATA NOT AVAILABLE

(WGNR47) DATA NOT AVAILABLE

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
.000	.000	.000	.000	LREF	327.7800	IN.
.000	.000	.000	.000	BREF	2348.0400	IN.
				XMRP	1339.9000	IN.XC
				YMRP	.0000	IN.YC
				ZMRP	190.8000	IN.ZC
				SCALE	.0300	

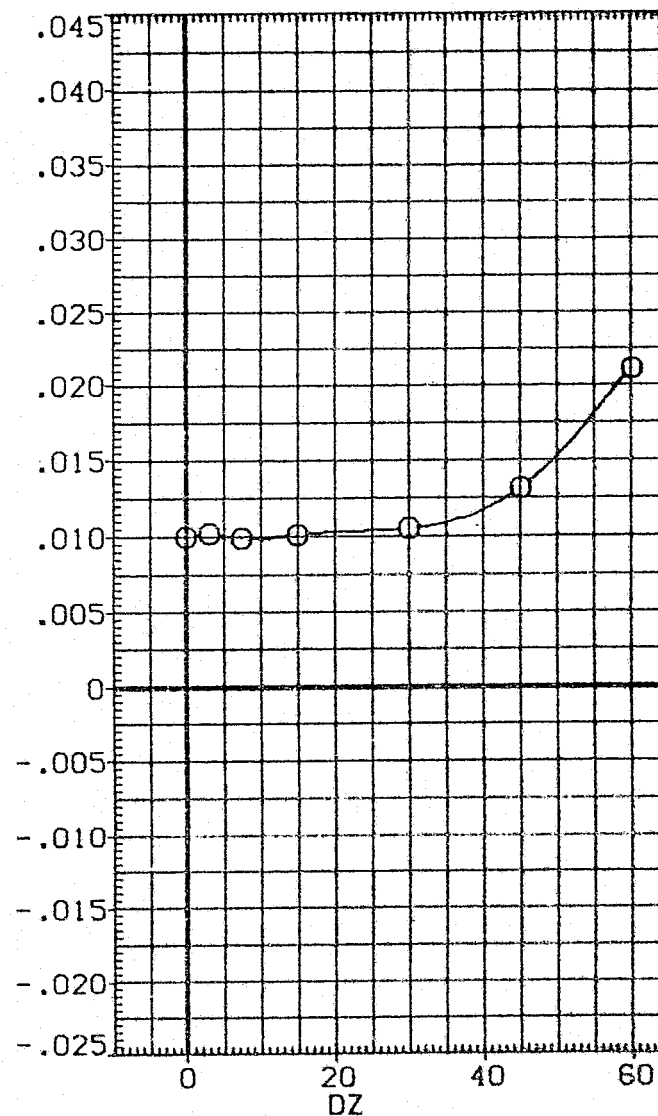
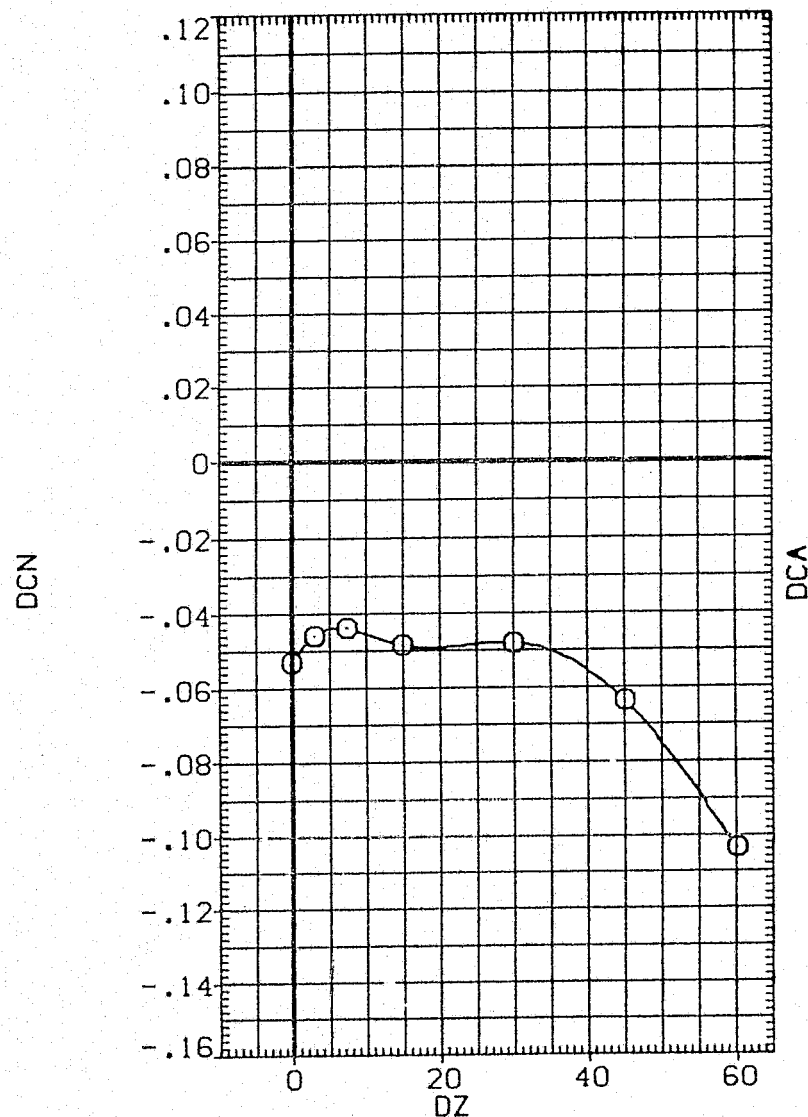


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(A) ALPHA0 = 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	
(WGNR45)	DATA NOT AVAILABLE	
(WGNR46)	CA20 747/1 01 S1 AT38 AT39	CARRIER DATA
(WGNR47)	DATA NOT AVAILABLE	

BETAC	BETA0	DX	DY	REFERENCE INFORMATION	
.000	.000	.000	.000	SREF	5500.0000 SQ.FT.
.000	.000	.000	.000	LREF	327.7800 IN.
.000	.000	.000	.000	BREF	2348.0400 IN.
				XMRP	1300.0000 IN.
				YMRP	.0000 IN.
				ZMRP	190.0000 IN.
				SCALE	.0300

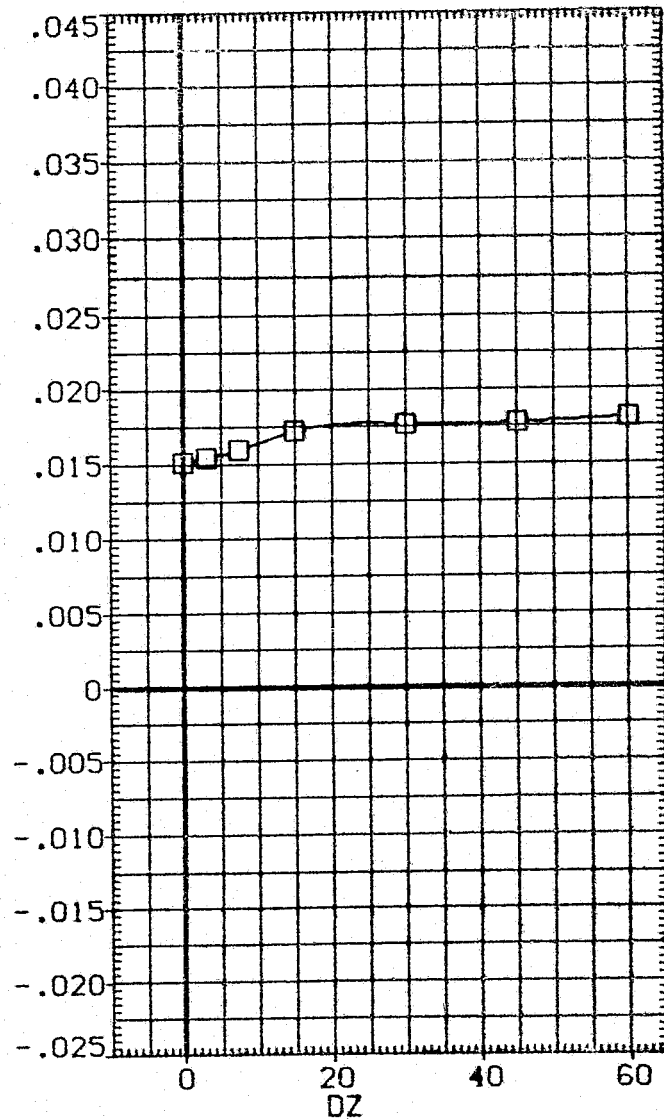
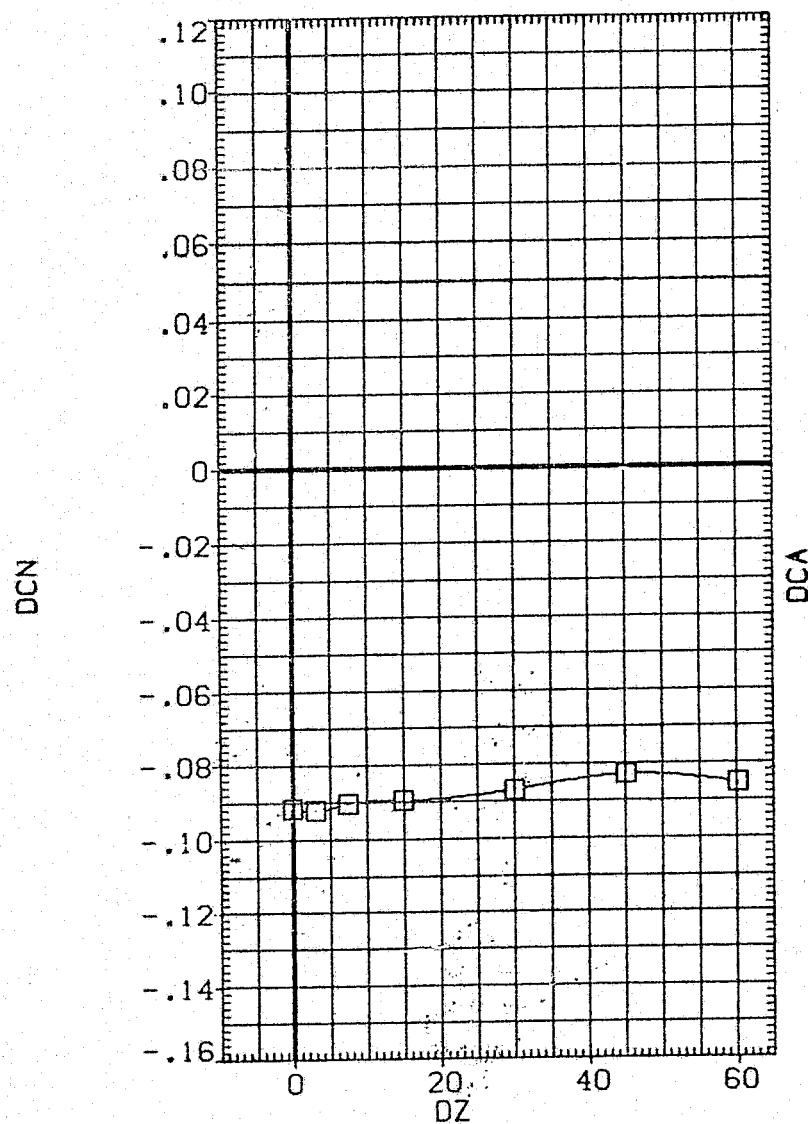


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER
 (B) ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(WGNR45) DATA NOT AVAILABLE
 (WGNR46) DATA NOT AVAILABLE
 (WGNR47) CA20 747/1 01 S1 AT38 AT39 CARRIER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	5500.0000	SQ.FT.
.000	.000	.000	.000	LREF	327.7800	IN.
.000	.000	.000	.000	BREF	2348.0400	IN.
				XMRP	1339.9000	IN.XC
				YMRP	.0000	IN.YC
				ZMRP	190.8000	IN.ZC
				SCALE	.0300	

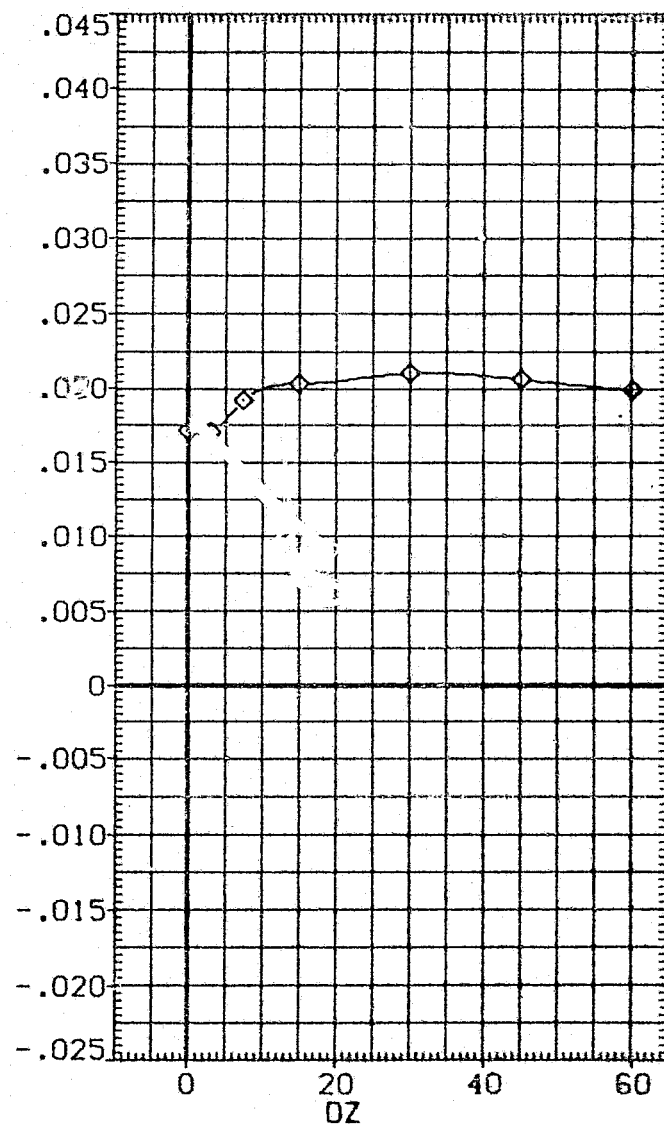
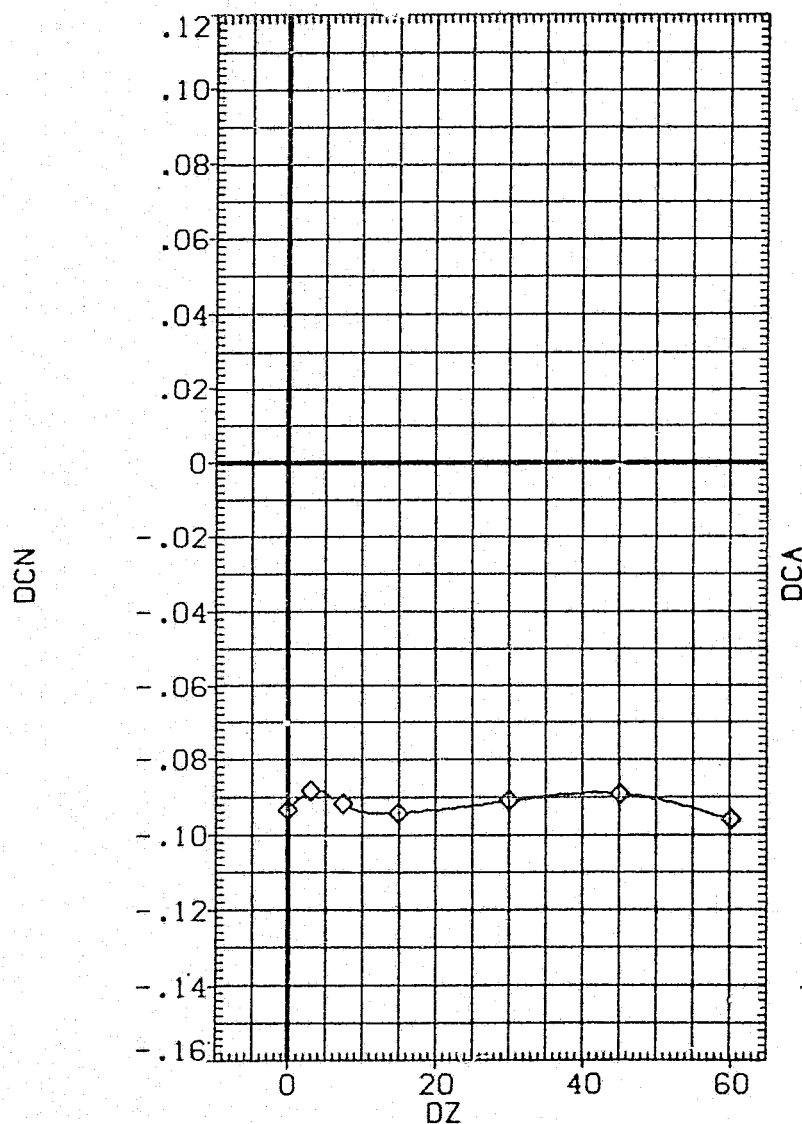


FIG 20A EFFECTS OF ATTACH HARDWARE ON CARRIER IN PRESENCE OF ORBITER

(C)ALPHA0= 16.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOG1)	CA20 747/1 01 S1 AT38 AT39
(SGNOC1)	CA20 747/0 01 S1 AT38 AT39

CARRIER DATA	IORB	ELEVON
CARRIER DATA	8.000	5.000

DX	DY
.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMHP	1339.8000	IN.YC
YMHP	.0000	IN.YC
ZMHP	190.0000	IN.ZC
SCALE	.0300	

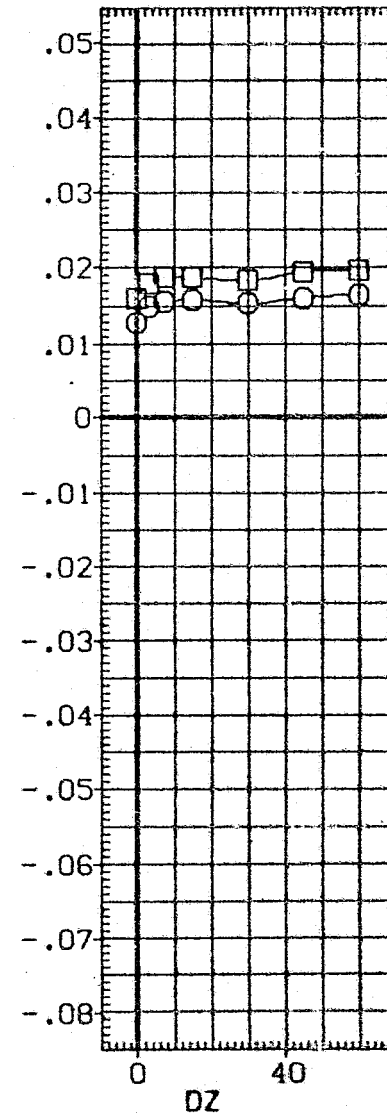
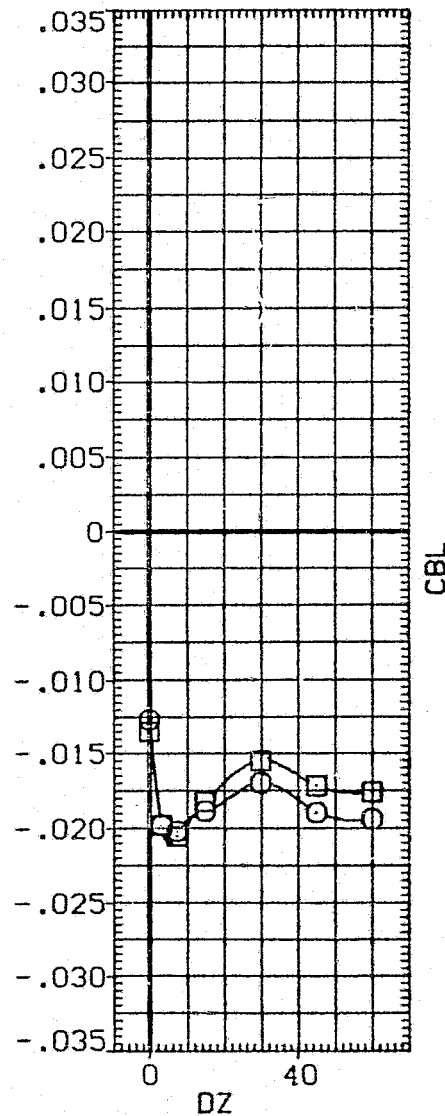
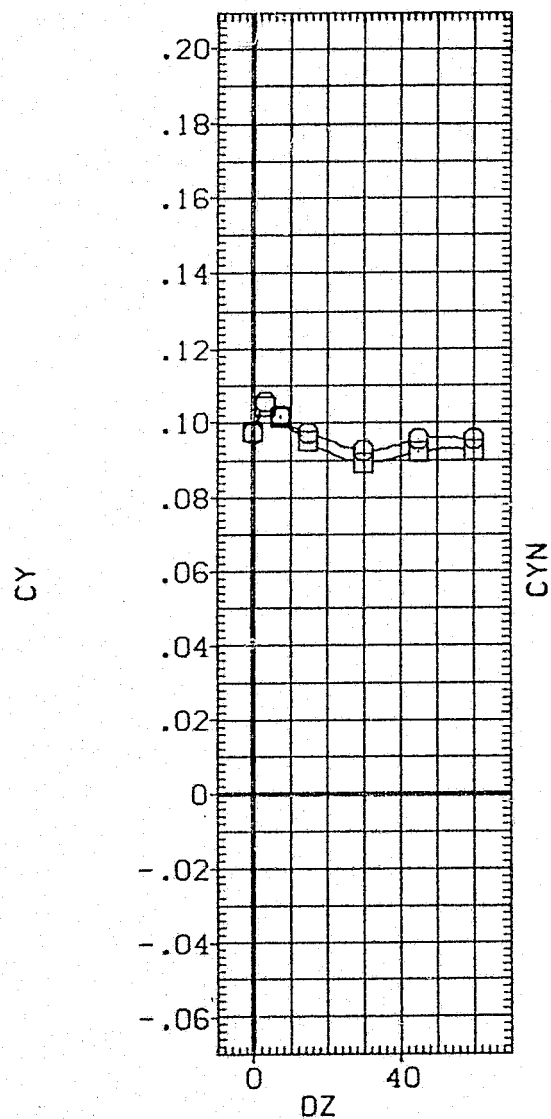


FIG 20B SIDESLIP EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A) BETA = -5.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOG1)	CA20 747/1 01 S1 AT38 AT39
(SGNOC1)	CA20 747/0 01 S1 AT38 AT39

	IORB	ELEVON	DX	DY
CARRIER DATA	8.000	5.000	.000	.000
CARRIER DATA	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

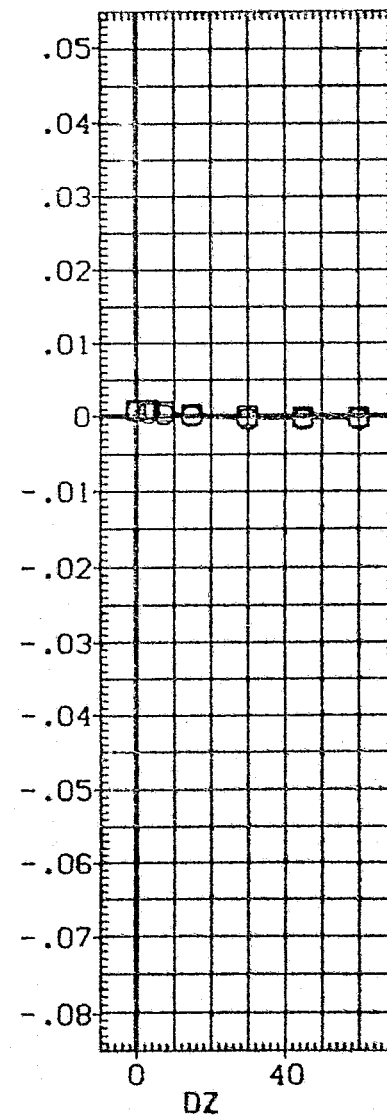
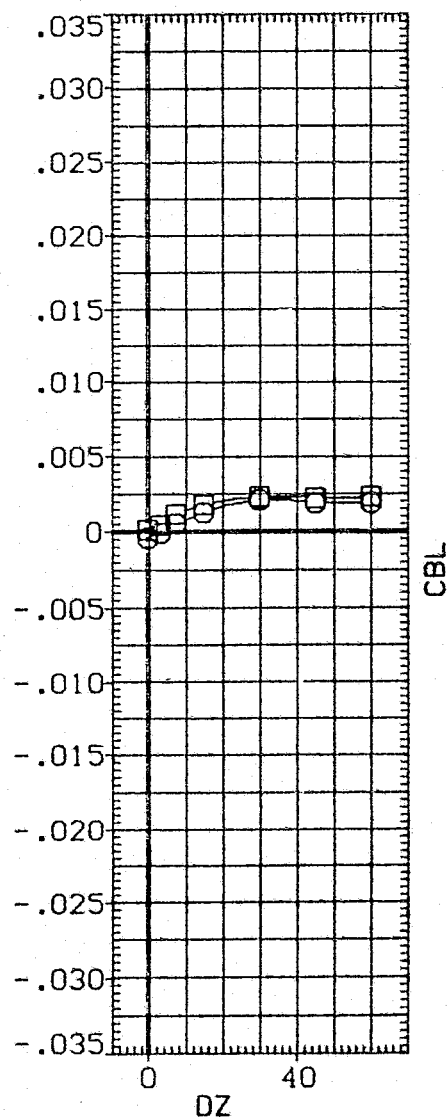
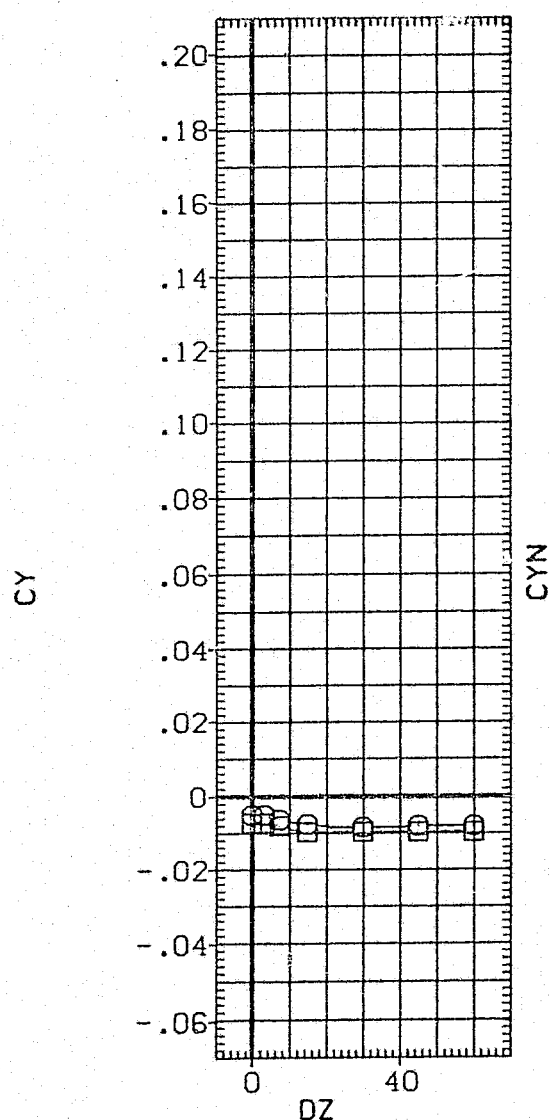


FIG 20B SIDESLIP EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(B)BETA = .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOG1)	CA20 747/1 01 S1 AT38 AT39
(SGNOG1)	CA20 747/0 01 S1 AT38 AT39

CARRIER DATA	IORB	ELEVON	DX	DY
CARRIER DATA	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
SREF	2340.0400	IN.
XMRP	1333.9000	IN.XC
YMRP	0.000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

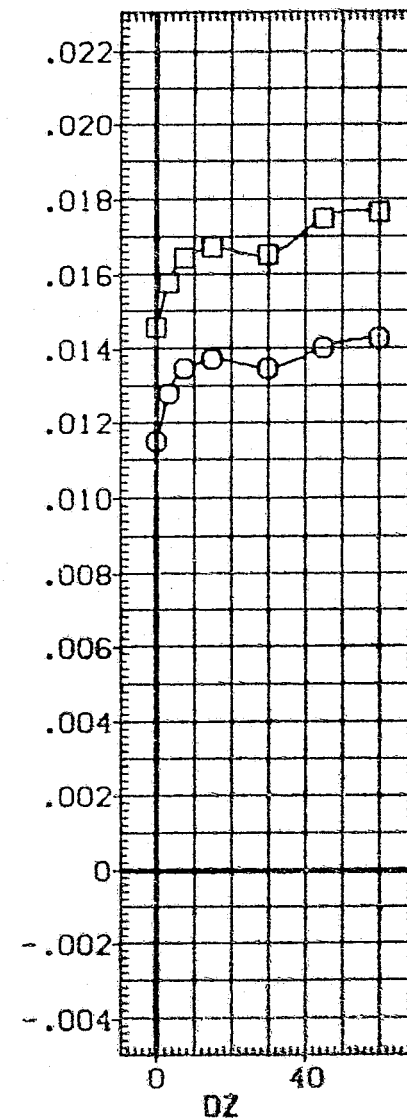
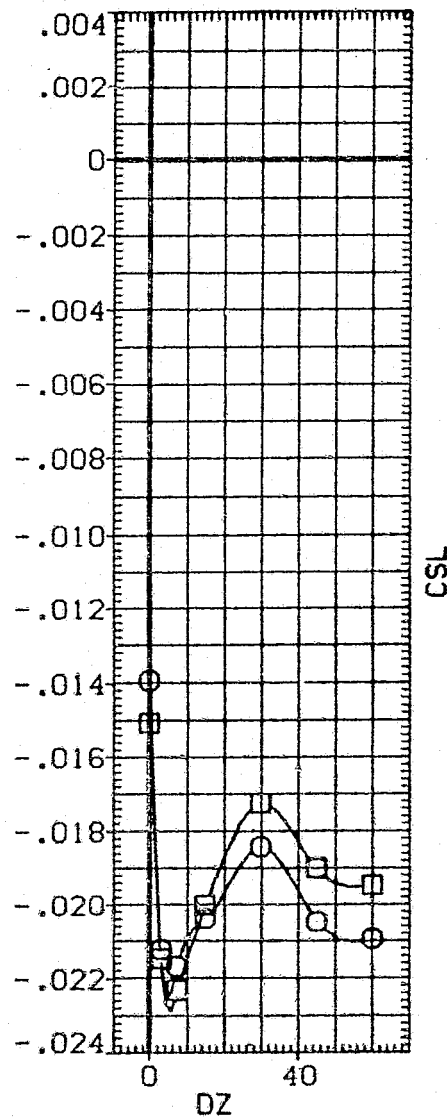
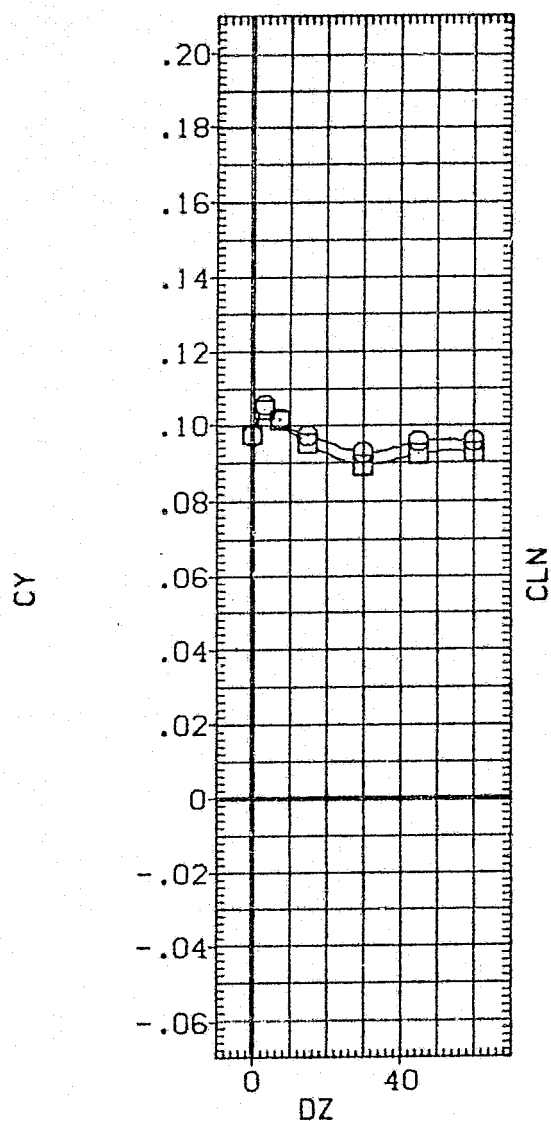


FIG 20B SIDESLIP EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (A) BETA = -5.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGN061)	CA20 747/1 01 S1 AT38 AT39
(SGN0C1)	CA20 747/0 01 S1 AT38 AT39

	IORB	ELEVON	DX	DY
CARRIER DATA	8.000	5.000	.000	.000
CARRIER DATA	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.0000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

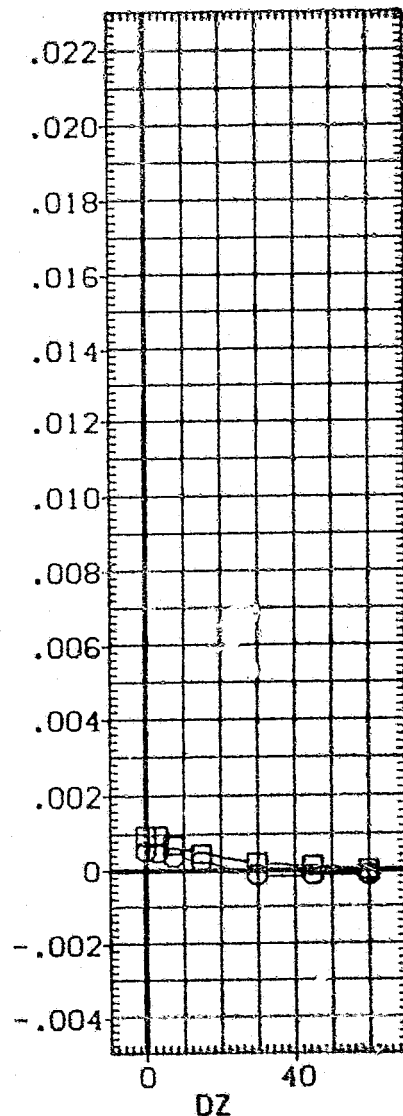
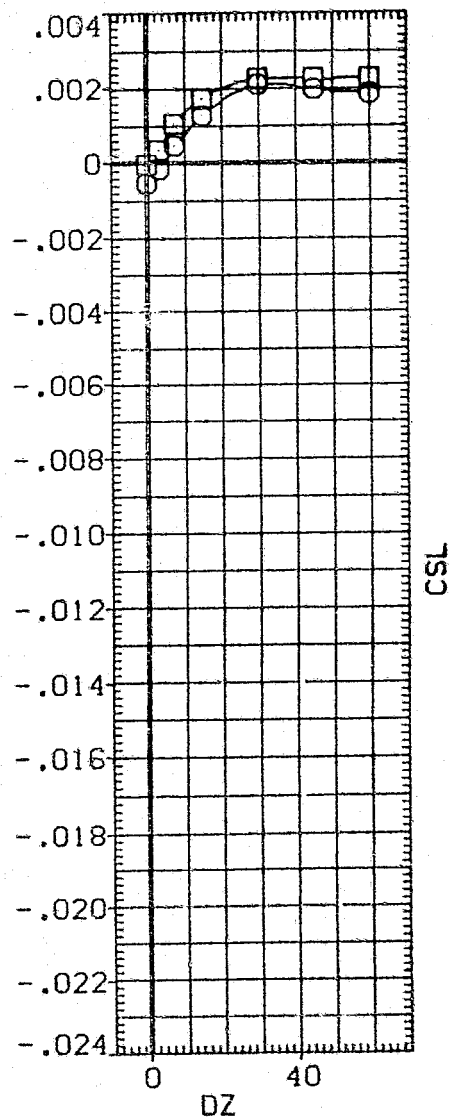
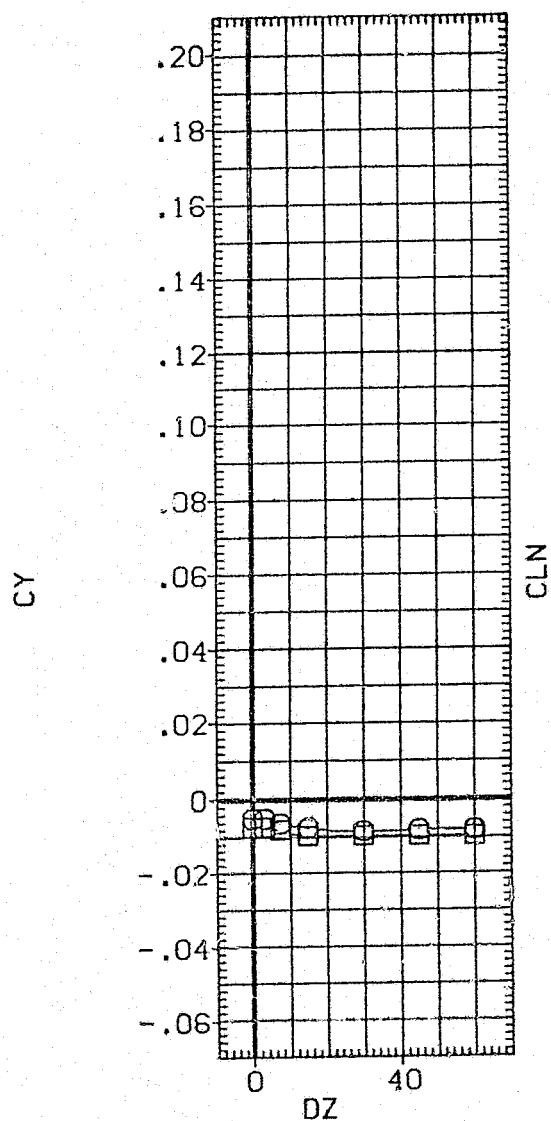


FIG 20B SIDESLIP EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (B)BETA = .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(WGNR48)	CA20 747/1 01 S1 AT38 AT39
(WGNR43)	CA20 747/0 01 S1 AT38 AT39

CARRIER DATA	BETAC	BETA0
CARRIER DATA	-5.000	-5.000

DX	DY
.000	.000
.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

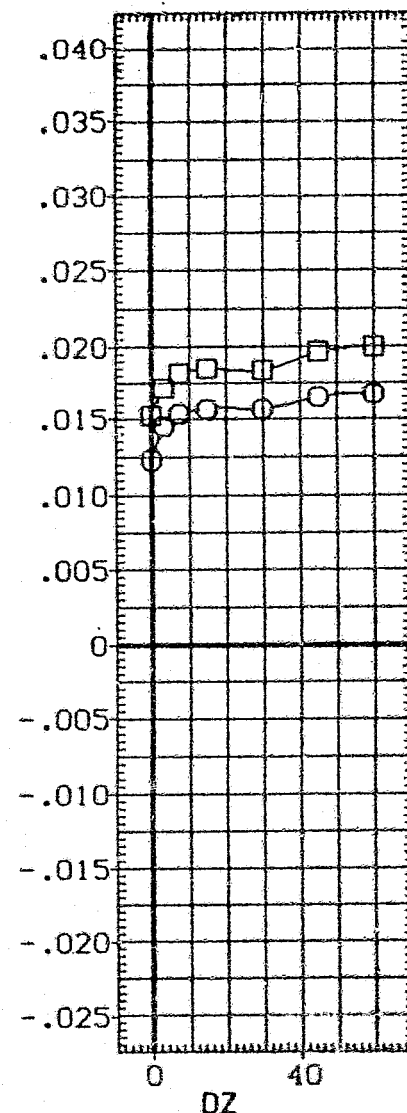
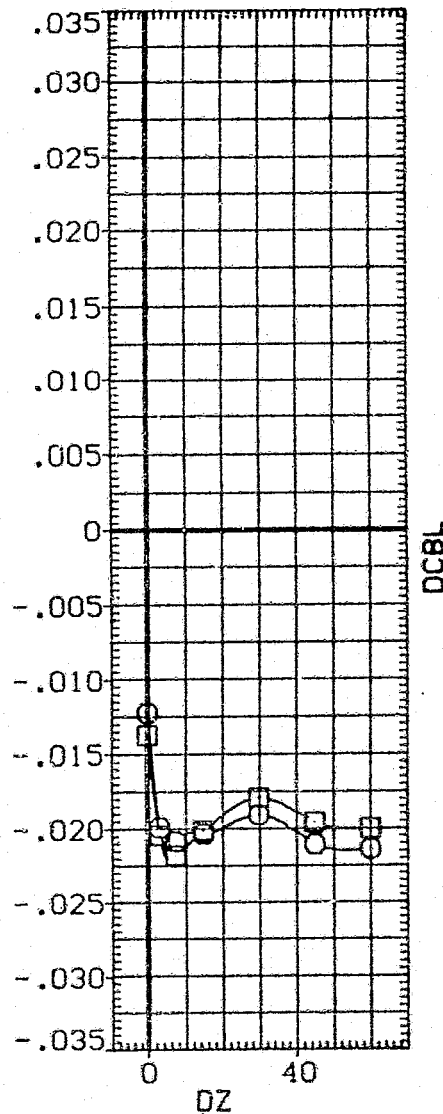
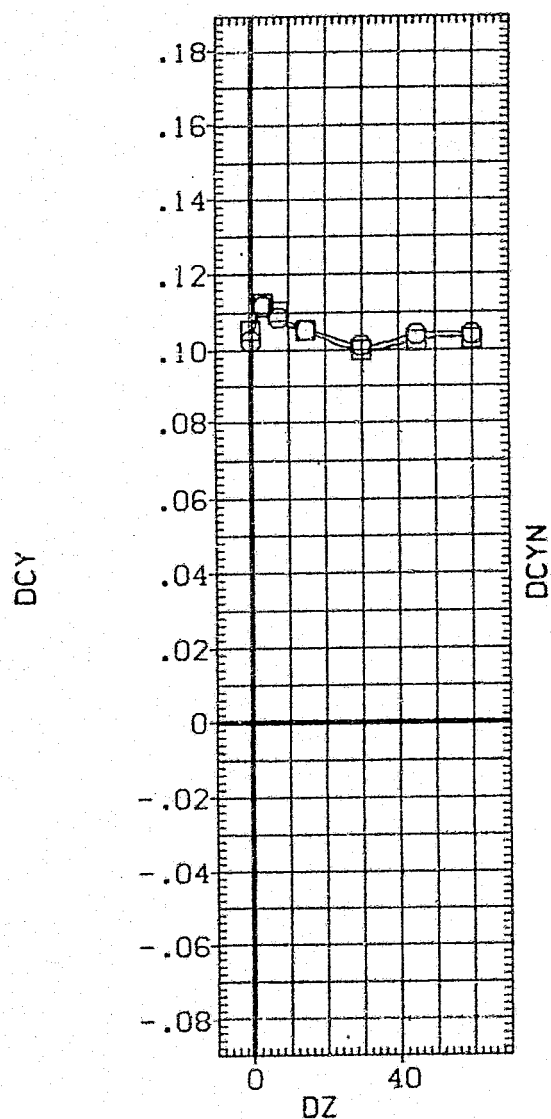


FIG 20B SIDESLIP EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A) ALPHA0= 12.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(WGNR48)	CA20 747/1 01 S1 AT38 AT39
(WGNR43)	CA20 747/0 01 S1 AT38 AT39

CARRIER DATA	BETAC	BETA0	DX	DY
CARRIER DATA	-5.000	-5.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

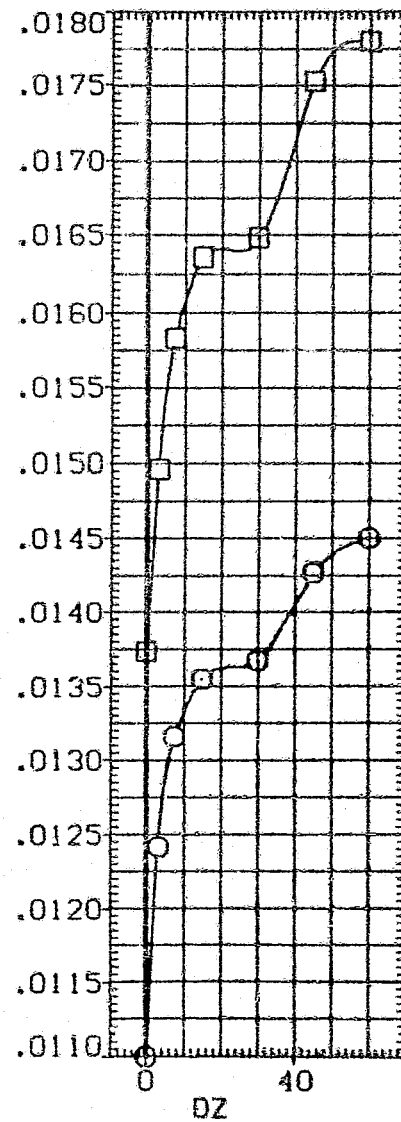
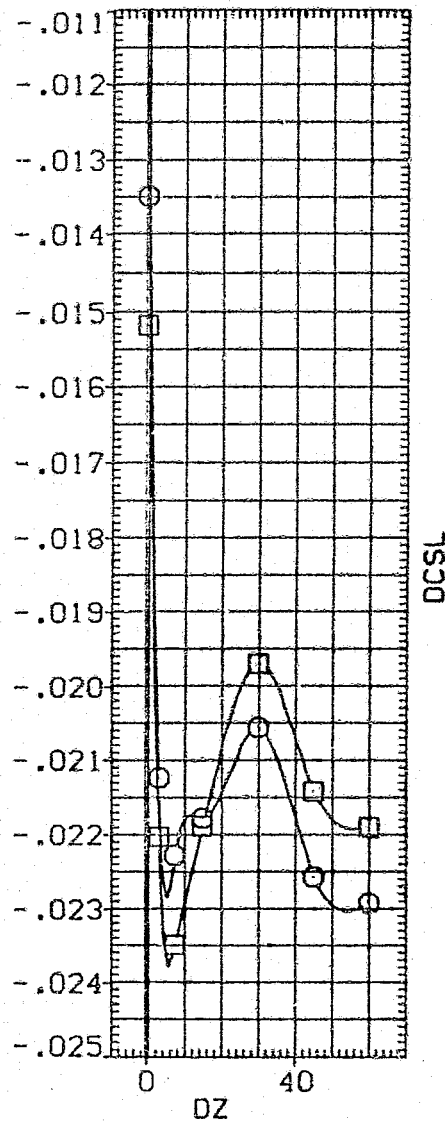
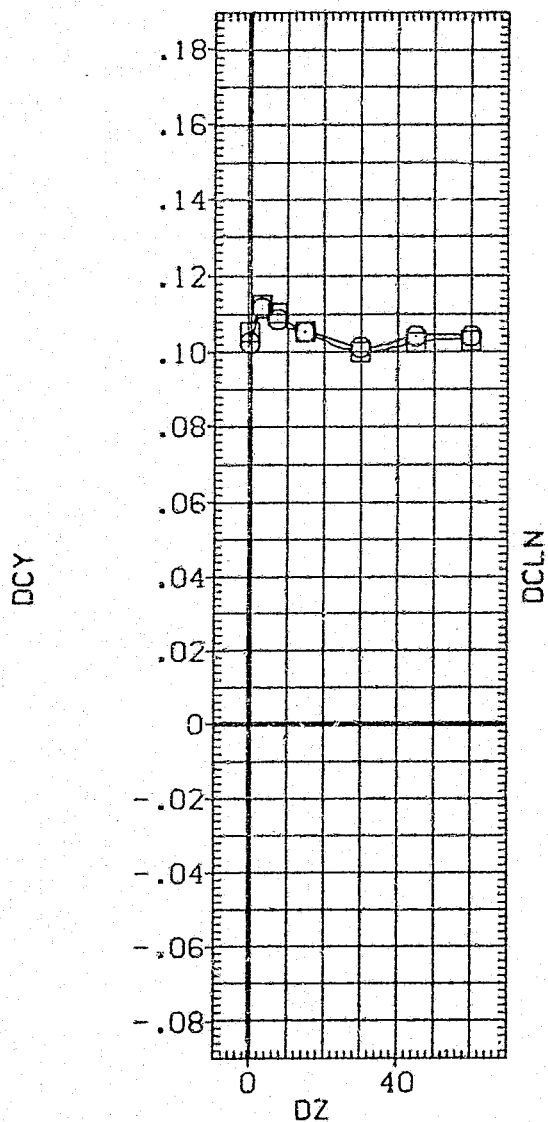


FIG 20B SIDESLIP EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A) ALPHA0 = 12.00

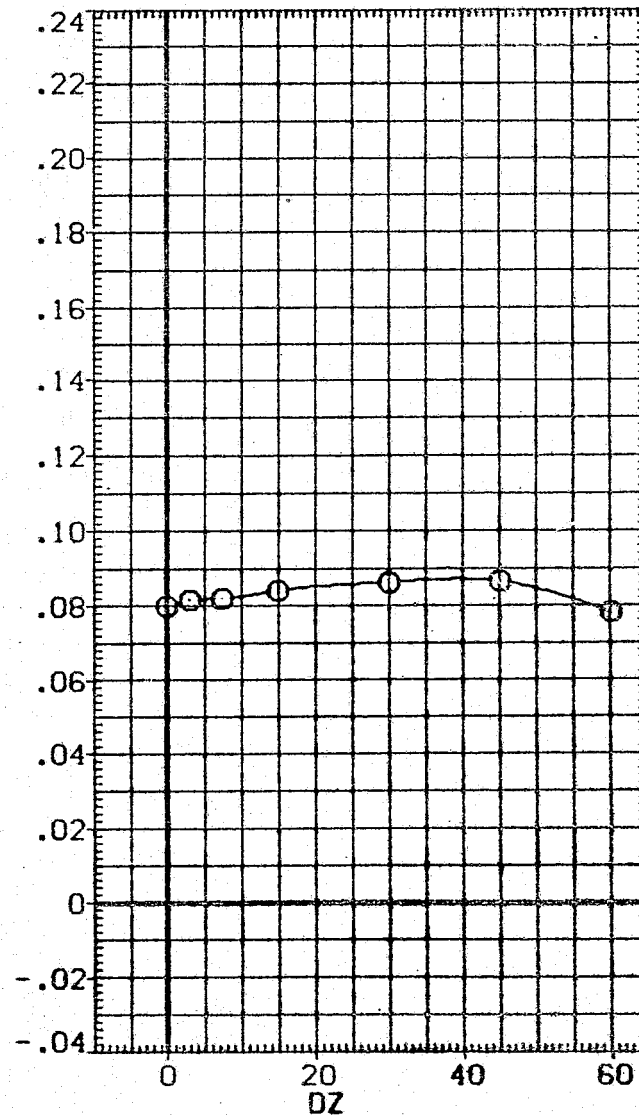
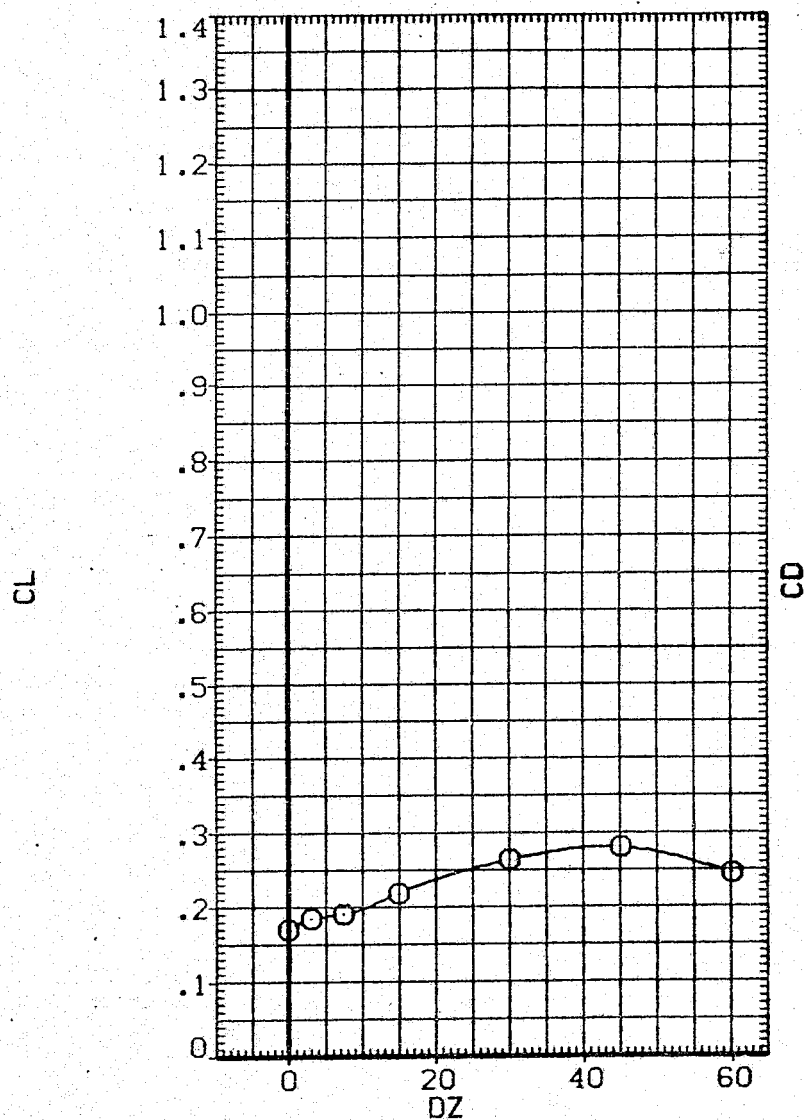


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A) ALPHA = 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNDA1) ○ CA20 747/0 01 S1 AT38 AT39

CARRIER DATA

BETAC .000
BETA0 .000
DX .000
DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

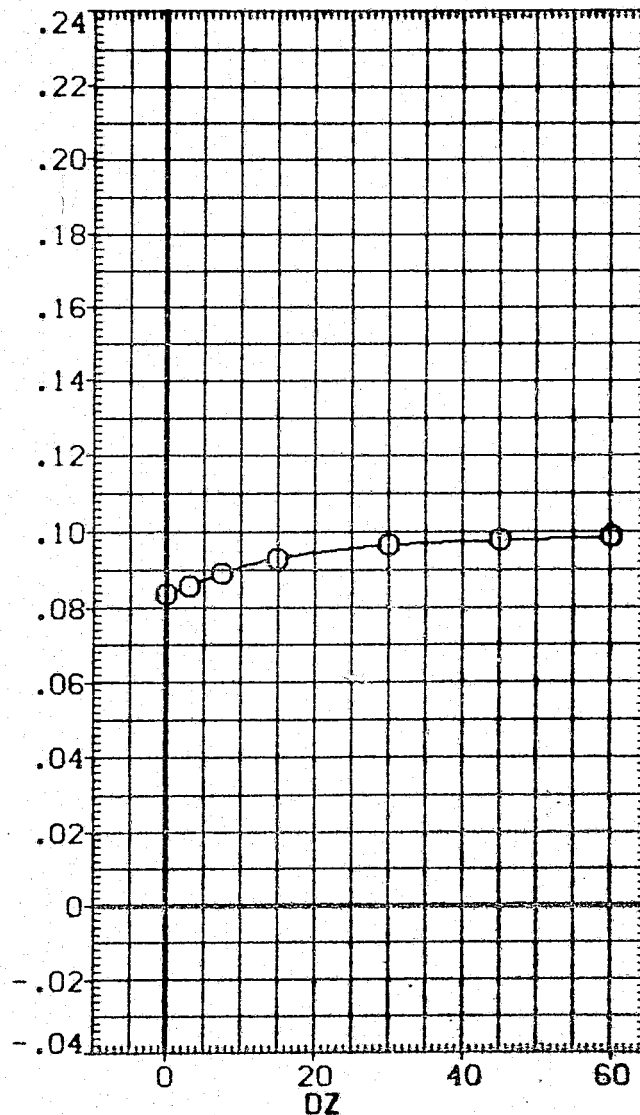
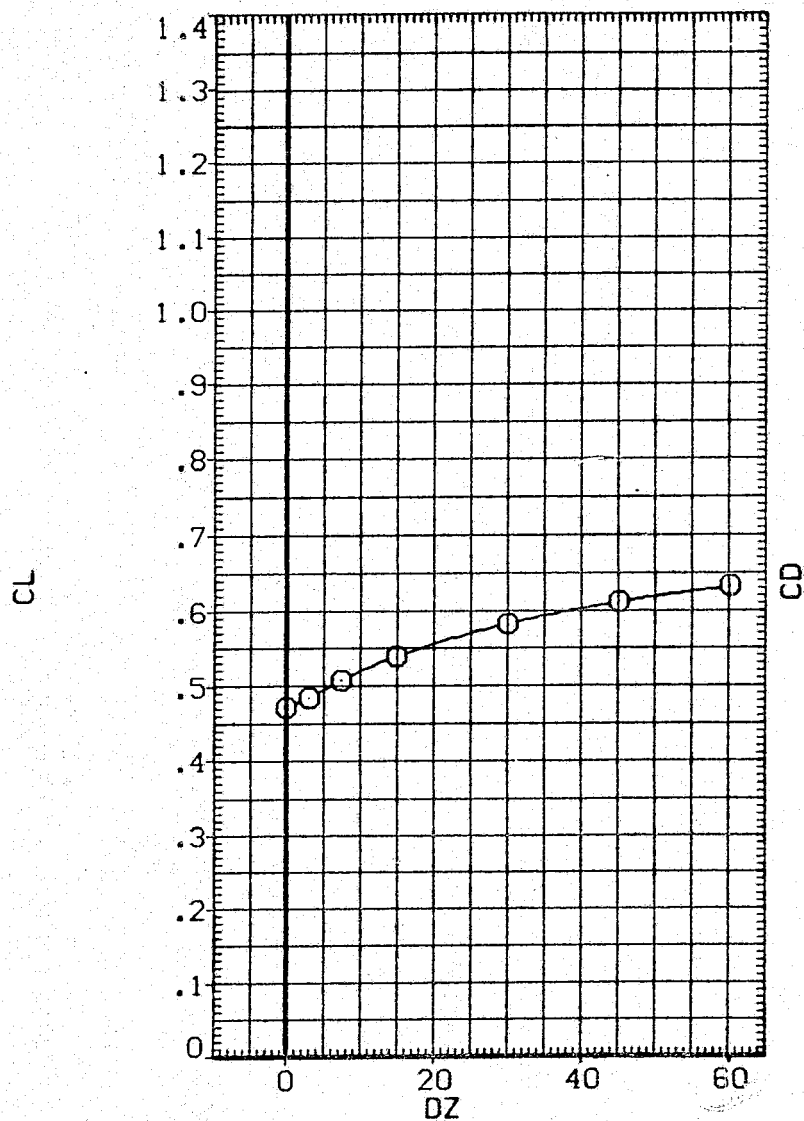


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(B)ALPHA= 6.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(S6NOA1) O CA20 747/0 01 S1 AT38 AT39

CARRIER DATA

BETAC .000 BETAD .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

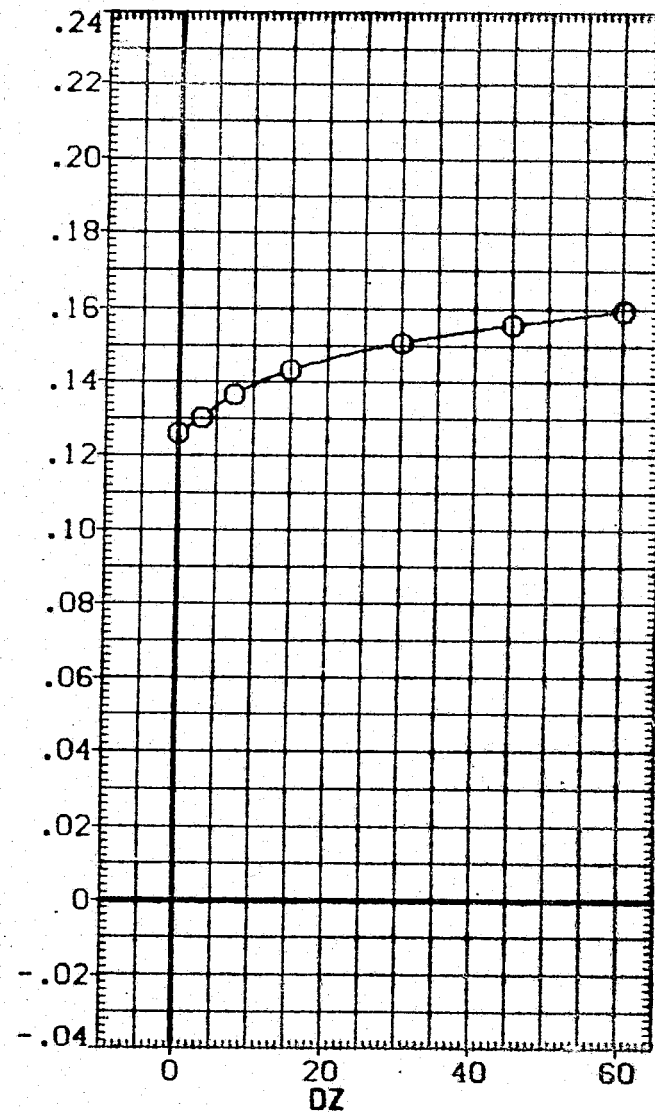
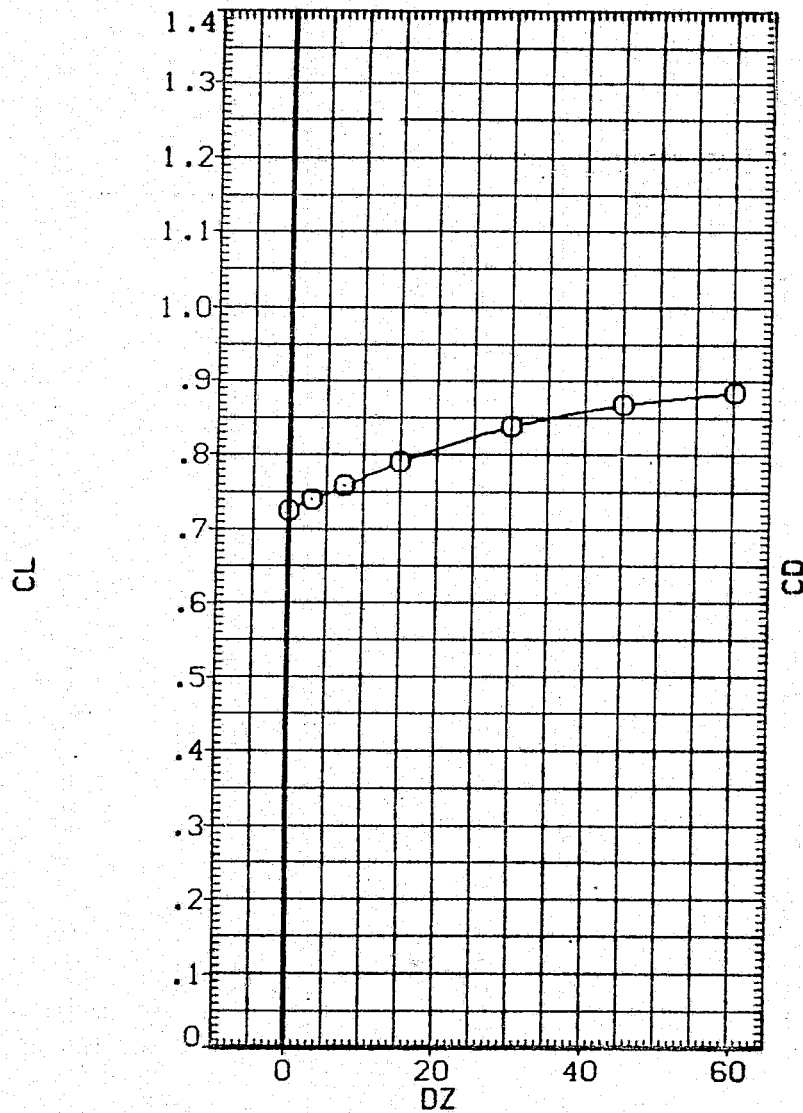


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(C)ALPHA= 10.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOA1) ○ CA20 747/0 01 S1 AT38 AT39

CARRIER DATA BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

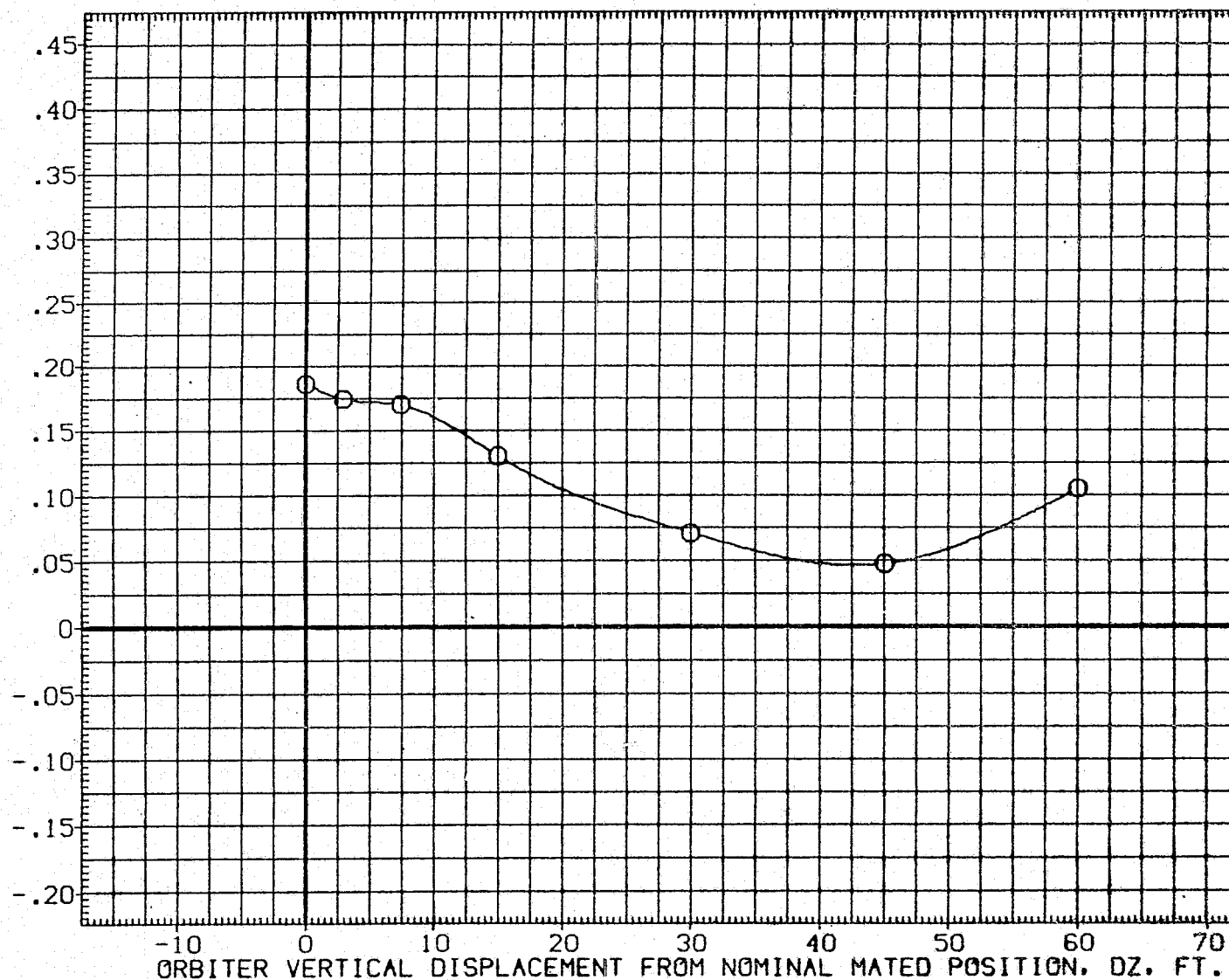


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A)ALPHA= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOA1) O CA20 747/0 01 S1 AT38 AT39

CARRIER DATA

BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.9000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

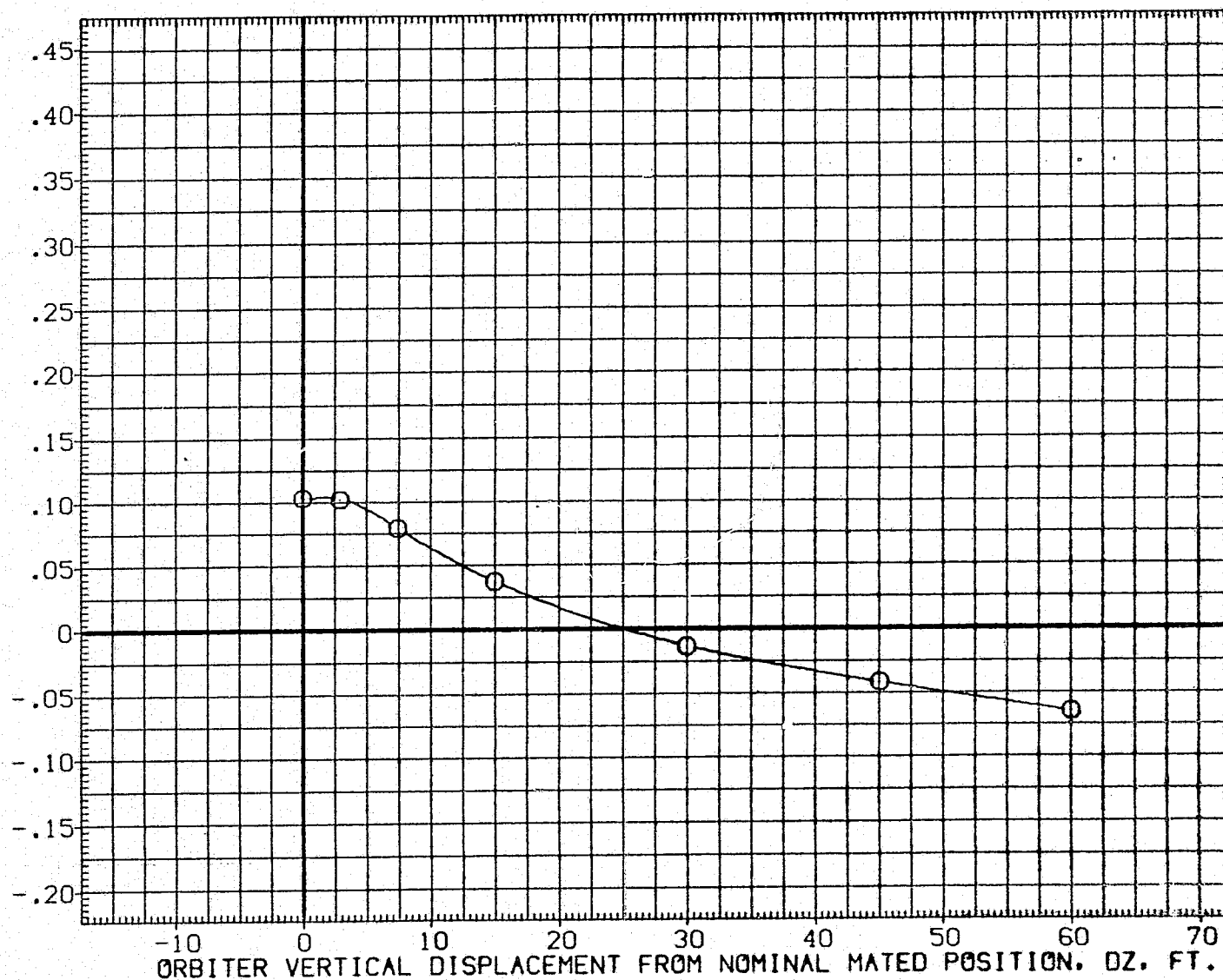


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (B)ALPHA= 6.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOA1) ○ CA20 747/0 01 S1 AT38 AT39

CARRIER DATA

BETAC BETAO DX DY
.000 .000 .000 .000

REFERENCE INFORMATION

SREF	5500.0000	SS.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

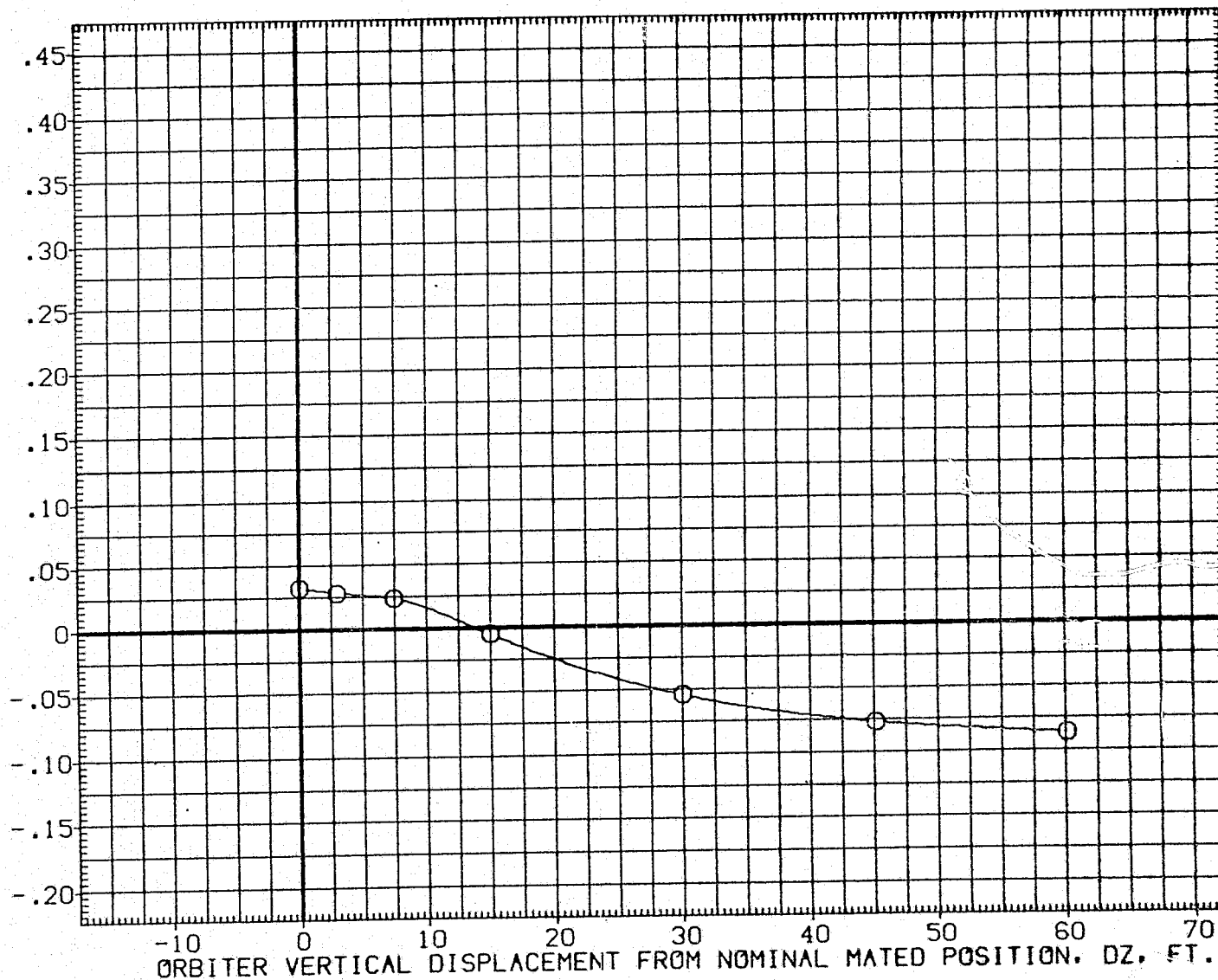


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(C)ALPHA= 10.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOA1) O CA20 747/0 01 S1 AT38 AT39 CARRIER DATA

BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 193.8000 IN.ZC
SCALE .0300

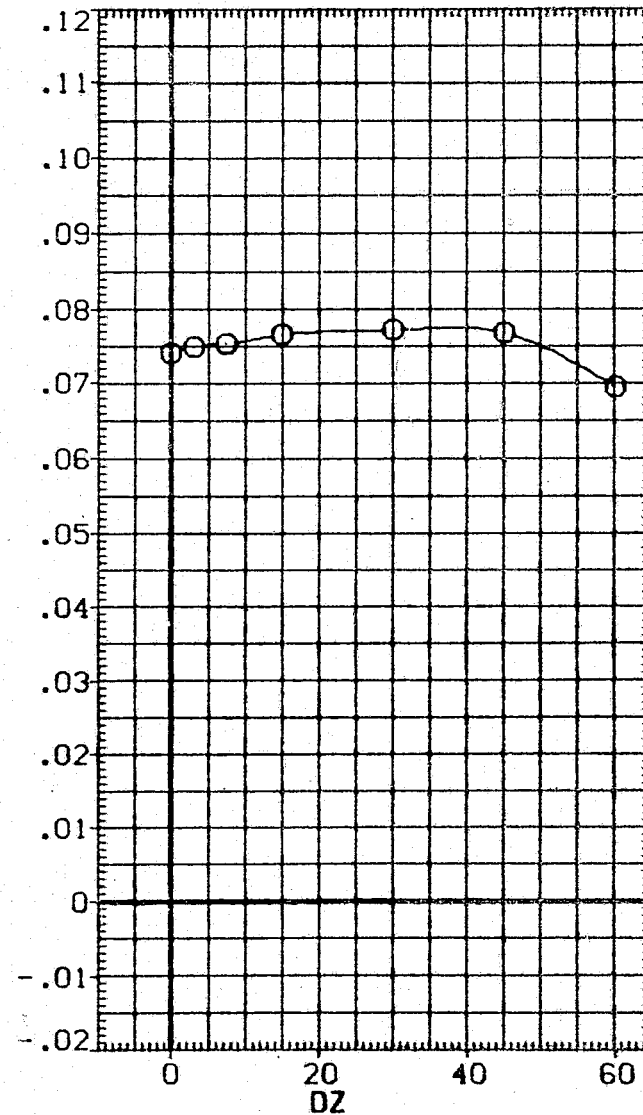
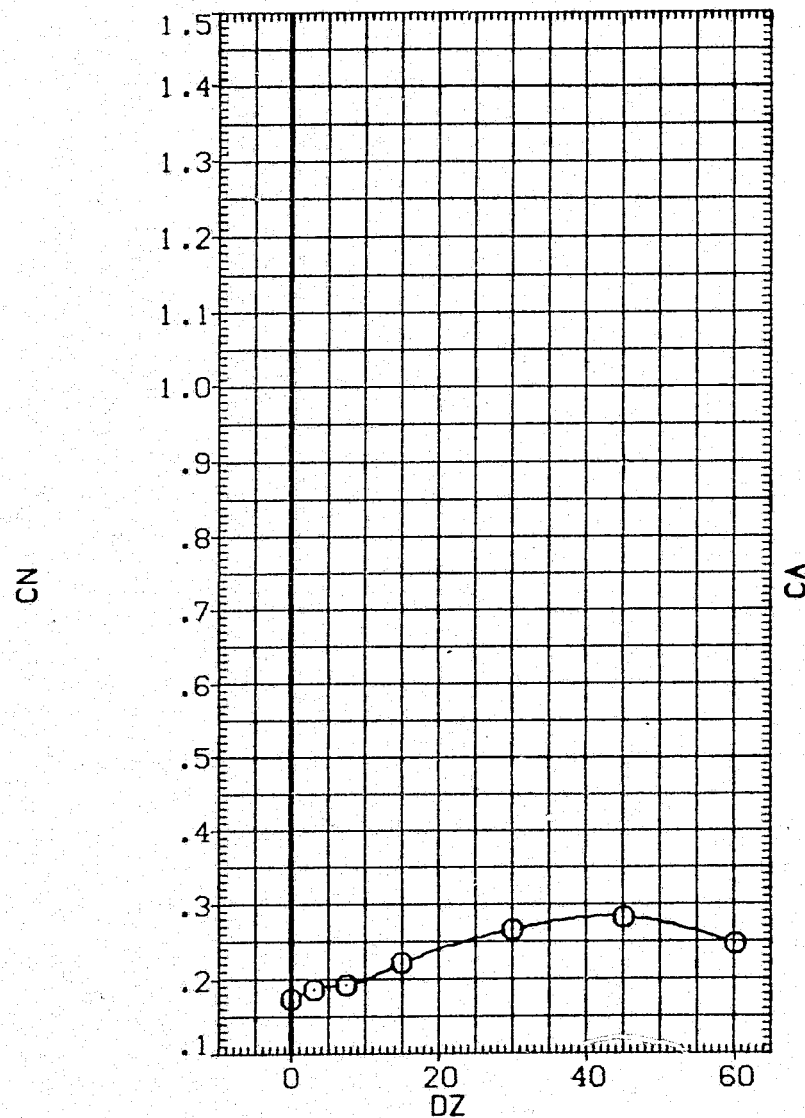


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A)ALPHA= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOA1) ○ CA20 747/0 01 S1 AT38 AT39 CARRIER DATA

BETAC BETAO DX DY
 .000 .000 .000 .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.3000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

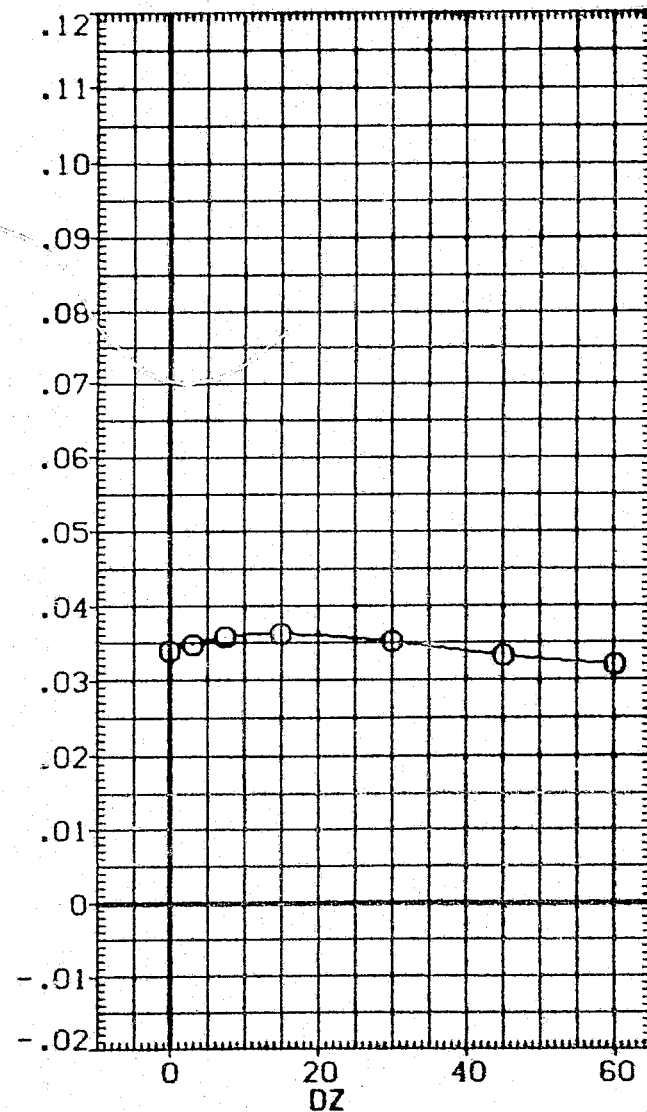
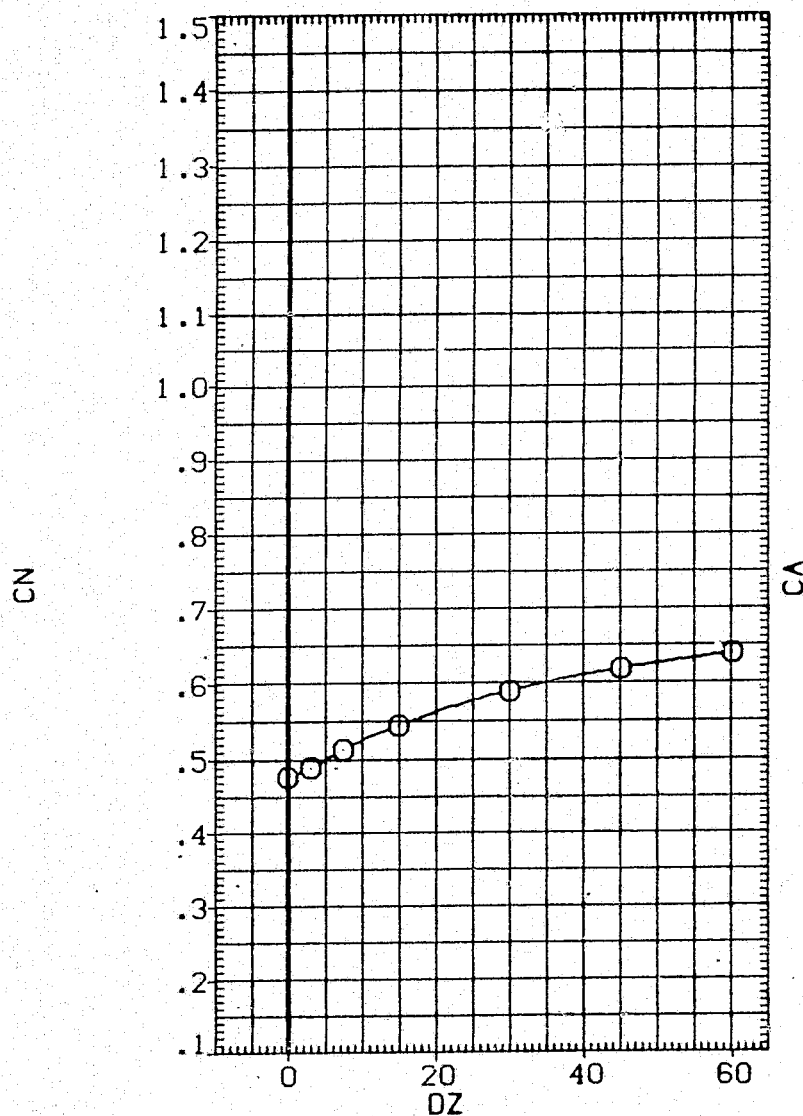


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (B)ALPHA= 6.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOAI) O CA20 747/0 01 S1 AT38 AT39 CARRIER DATA

BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.9000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

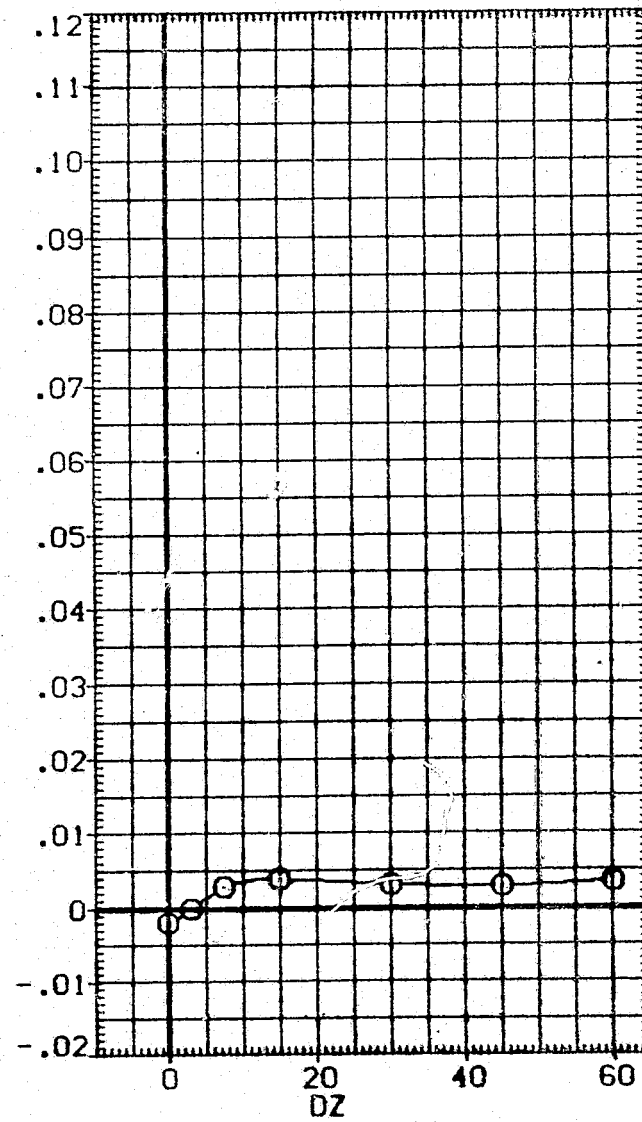
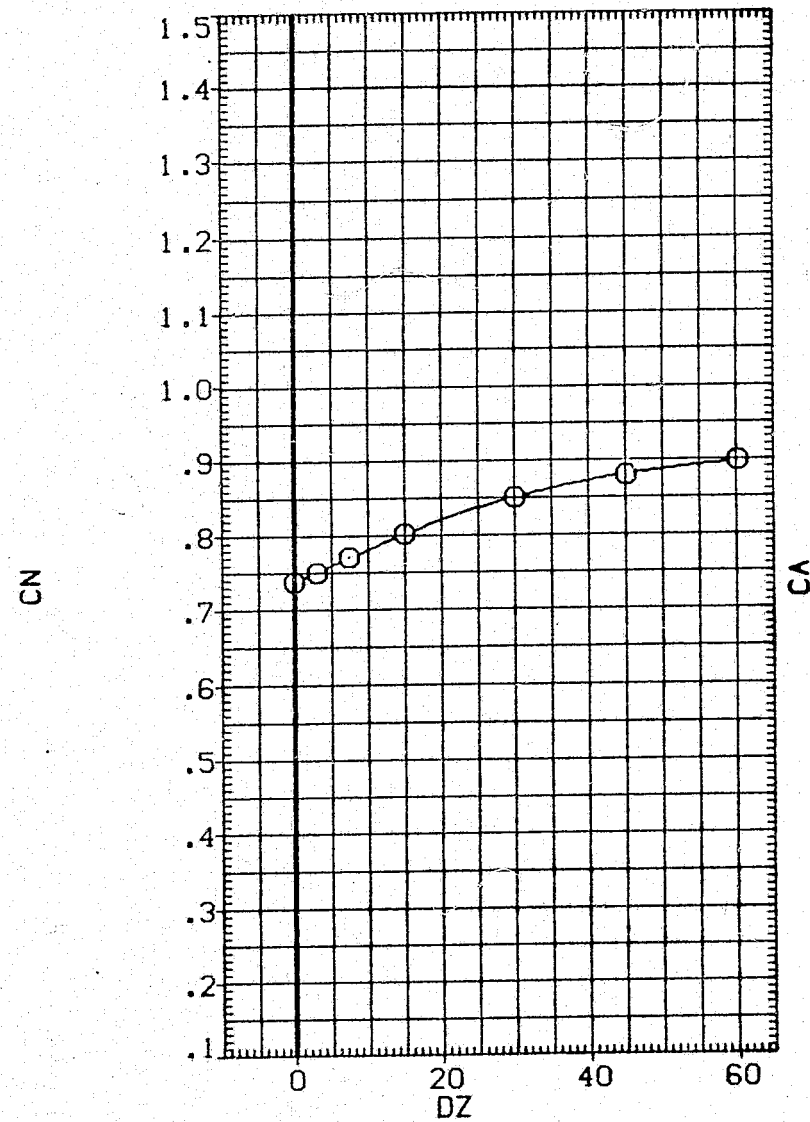


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (C)ALPHA= 10.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOA1) ○ CA20 747/0 01 S1 AT38 AT39

CARRIER DATA BETAC BETAO DX DY
 .000 .000 .000 .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

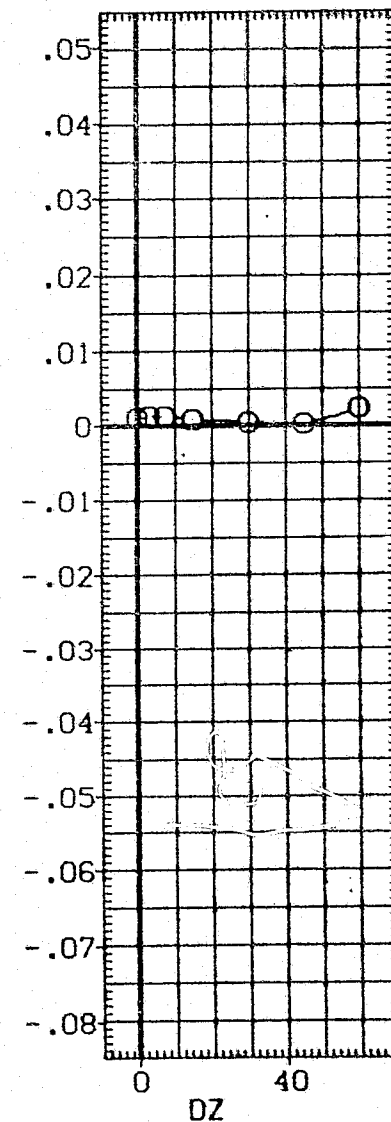
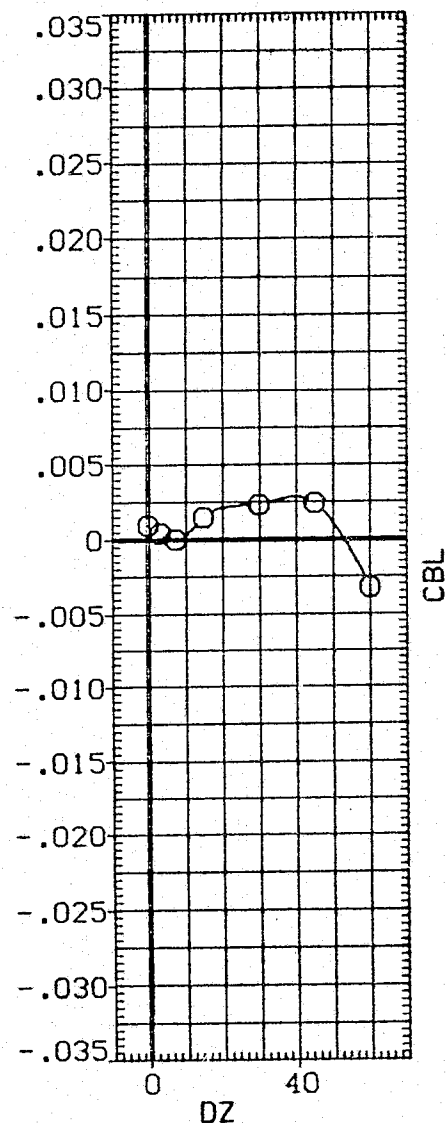
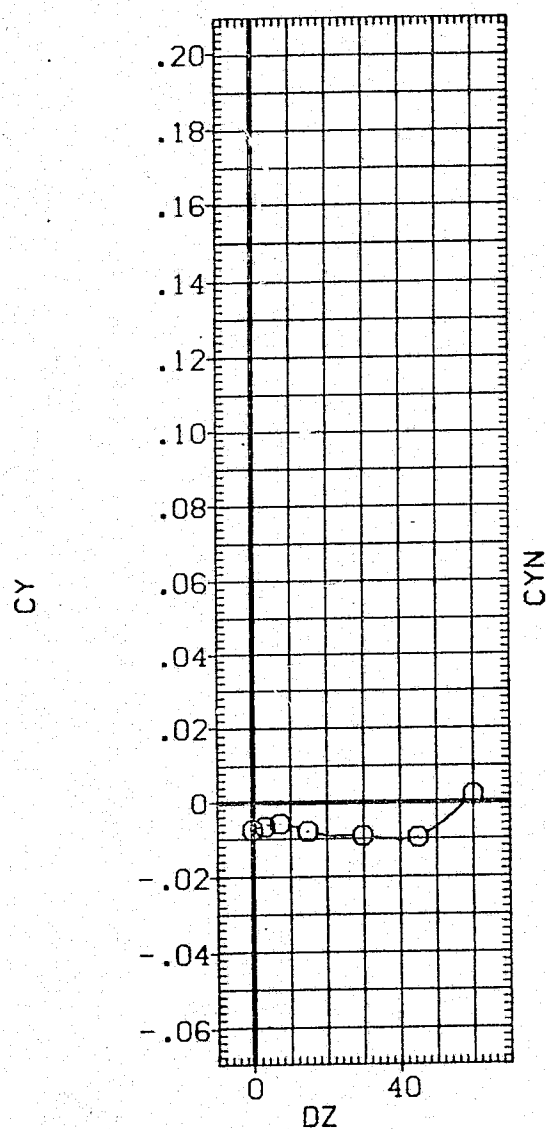


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A)ALPHA= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOA1) ○ CA20 747/0 01 SI AT38 AT39

CARRIER DATA

BETAC BETAD DX DY
.000 .000 .000 .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2340.0000 IN.
XMRP 1330.0000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

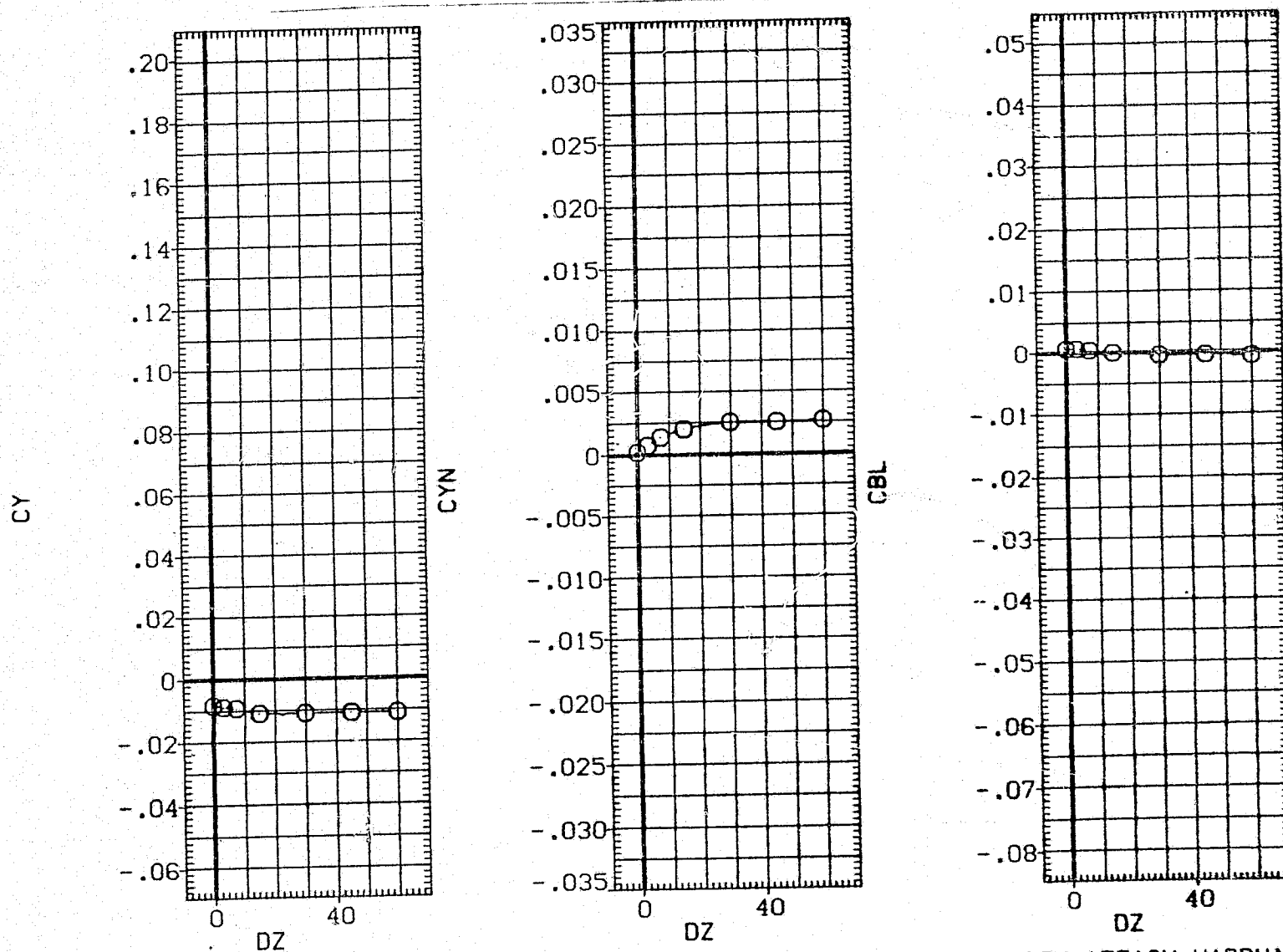


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(B) ALPHA = 6.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGN0A1) ○ CA20 747/0 01 S1 AT38 AT39

CARRIER DATA BETAC .000 BETA0 .000 DX .000

DY .000
 REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.9000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

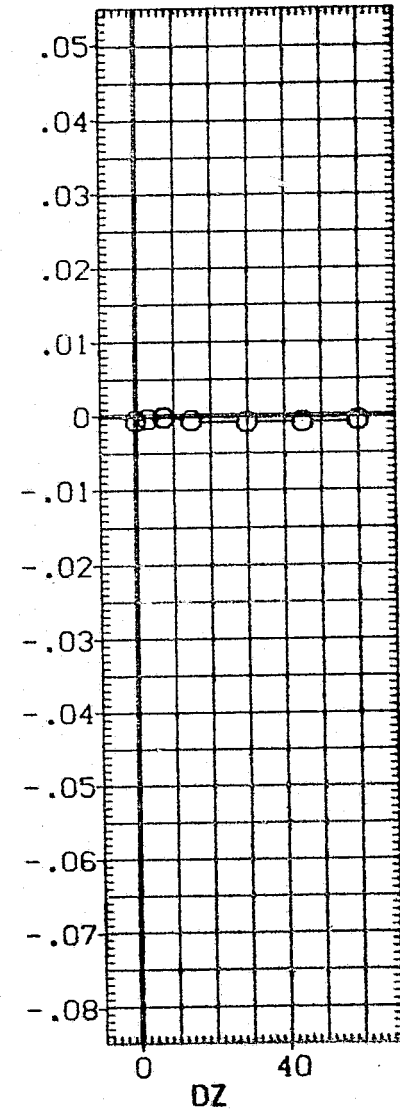
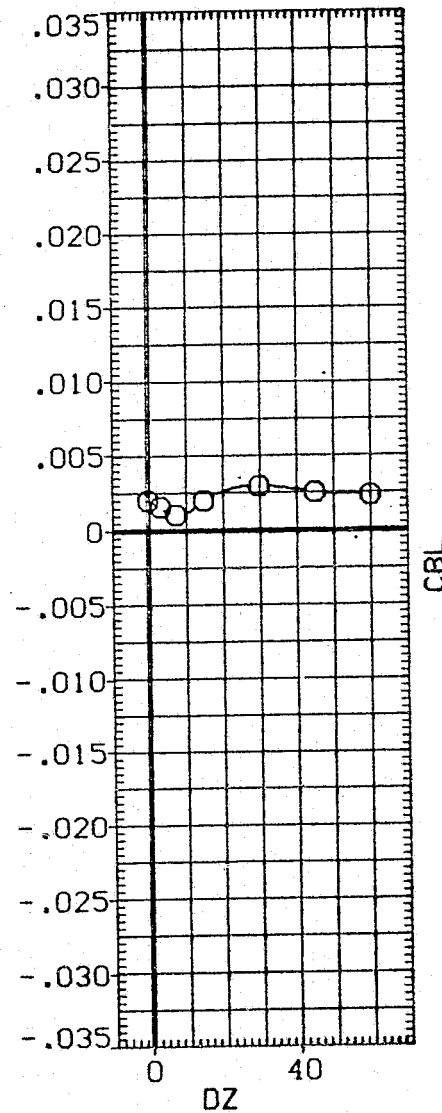
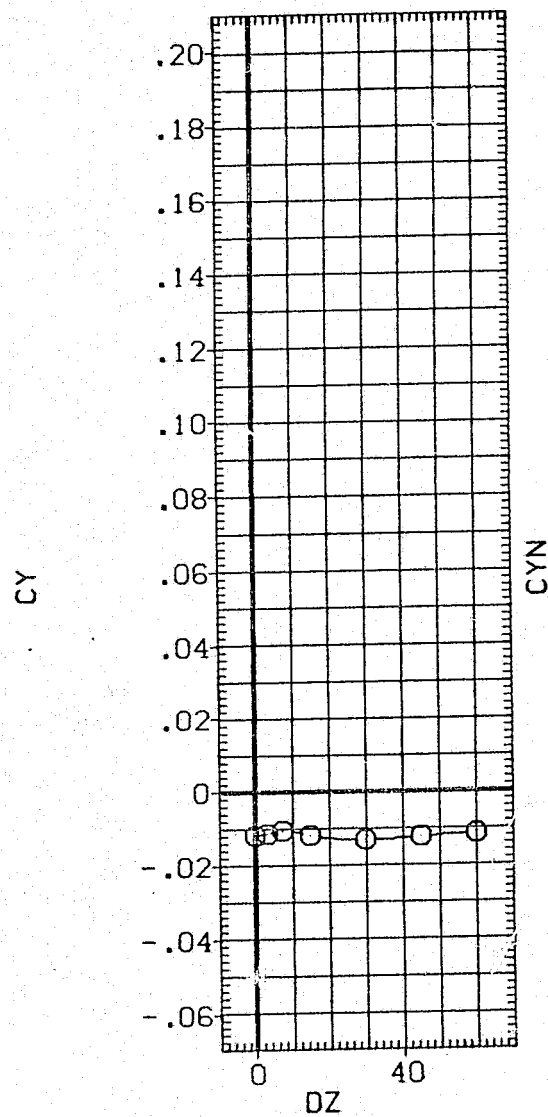


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (C)ALPHA= 10.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGN0A1) ○ CA20 747/0 01 S1 AT38 AT39

CARRIER DATA

BETAC .000
BETA0 .000
DX .000
DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.8000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

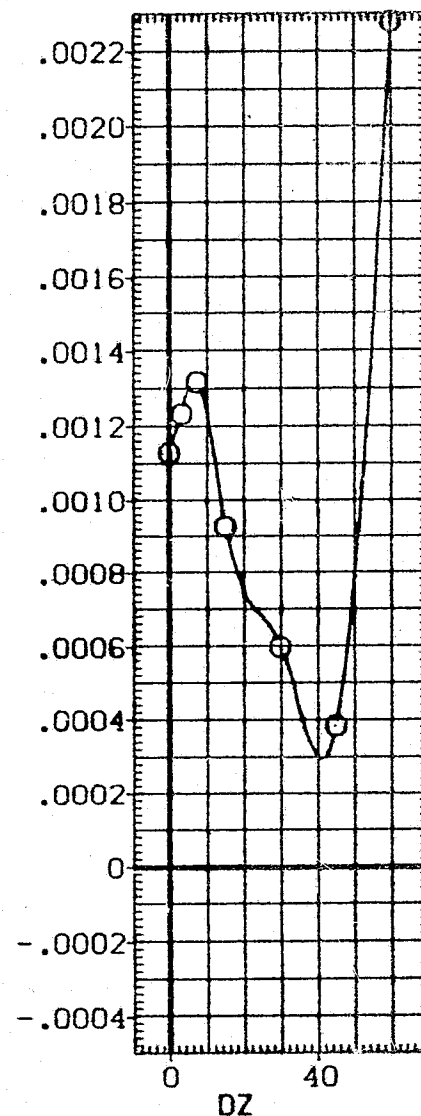
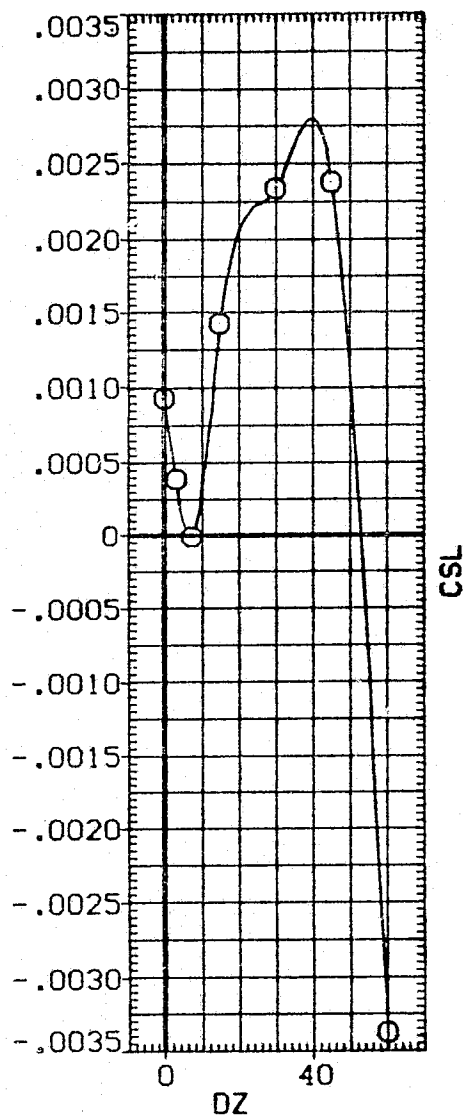
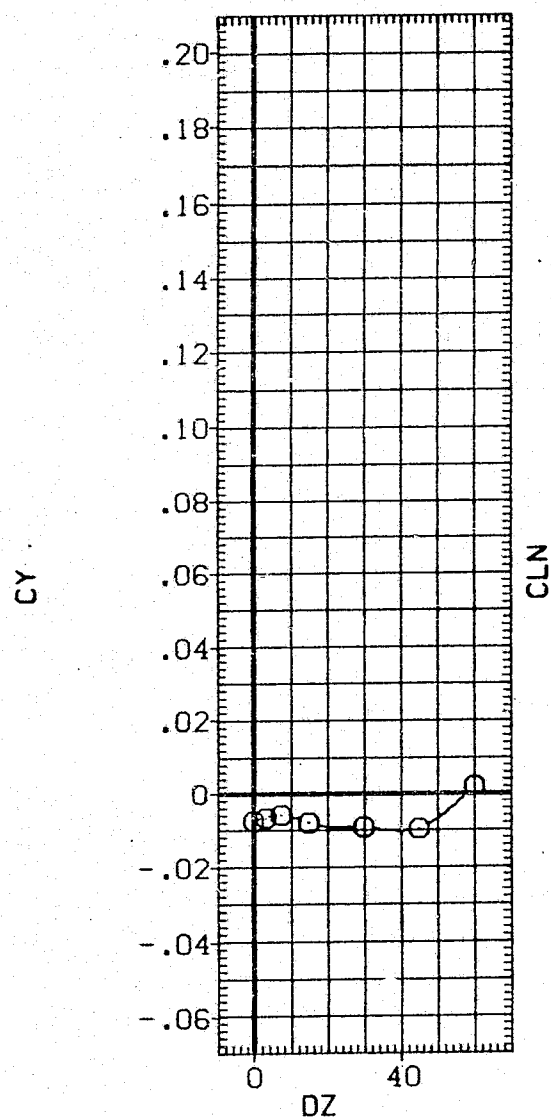


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A)ALPHA= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOA1) ○ CA20 747/0 01 S1 AT38 AT39

CARRIER DATA BETAC .000 BETAO .000 DX .000

DY .000 REFERENCE INFORMATION
SREF 5500.0000 50.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 150.8000 IN.ZC
SCALE .0300

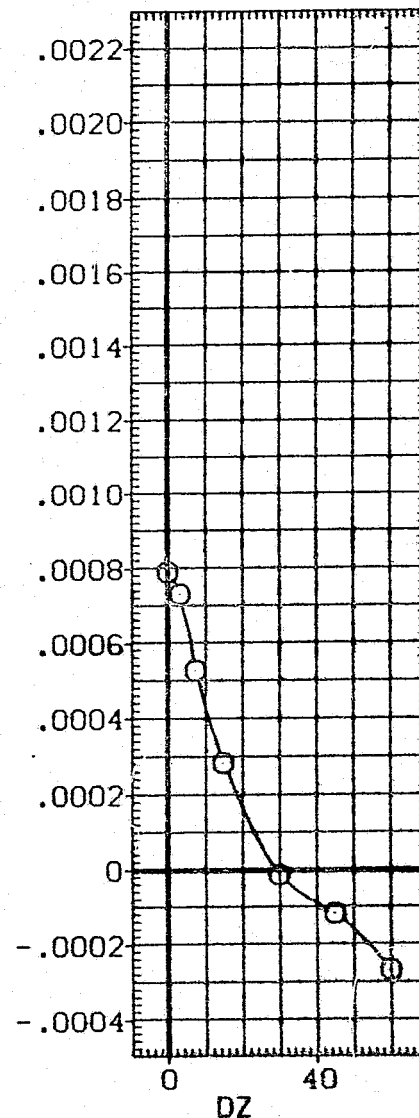
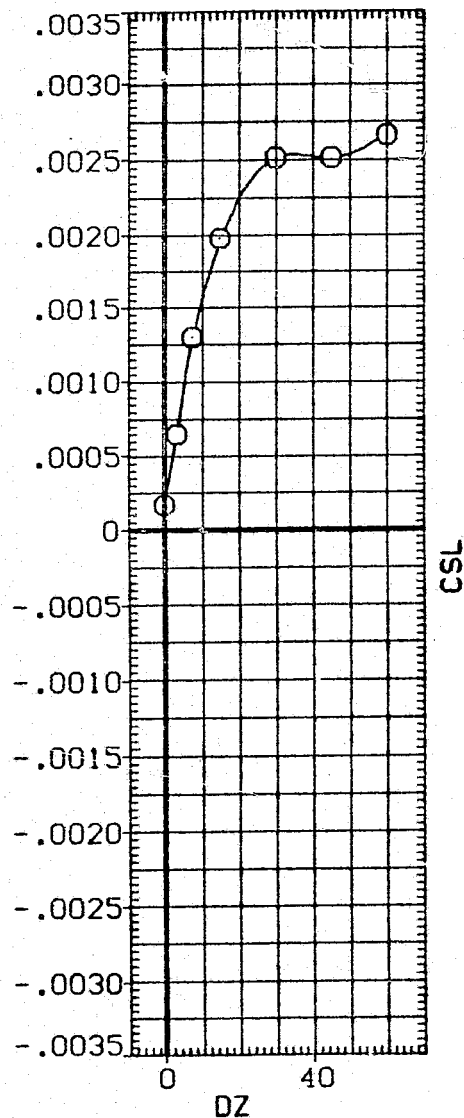
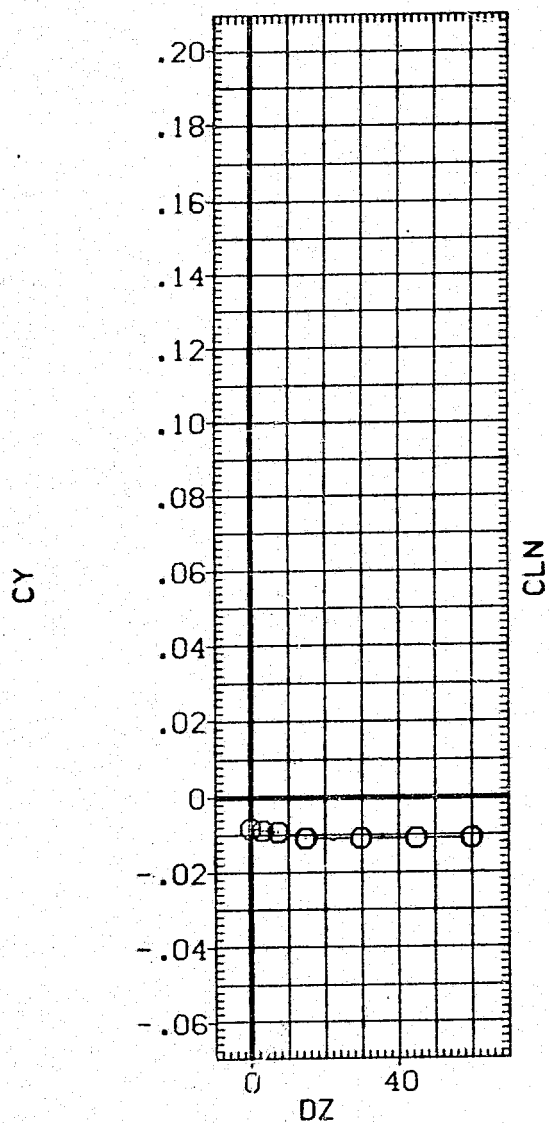


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(B)ALPHA= 6.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOA1) O CA20 747/0 01 S1 AT38 AT39

CARRIER DATA BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2349.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

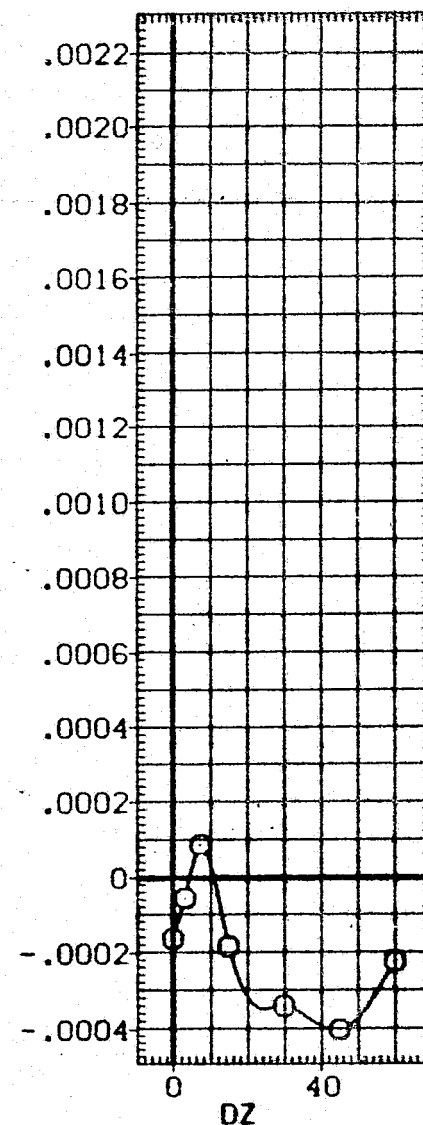
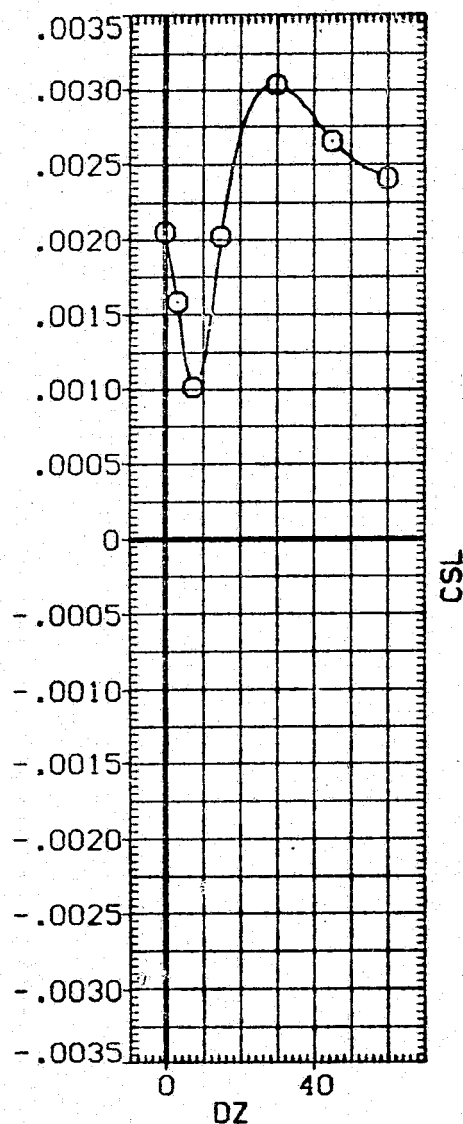
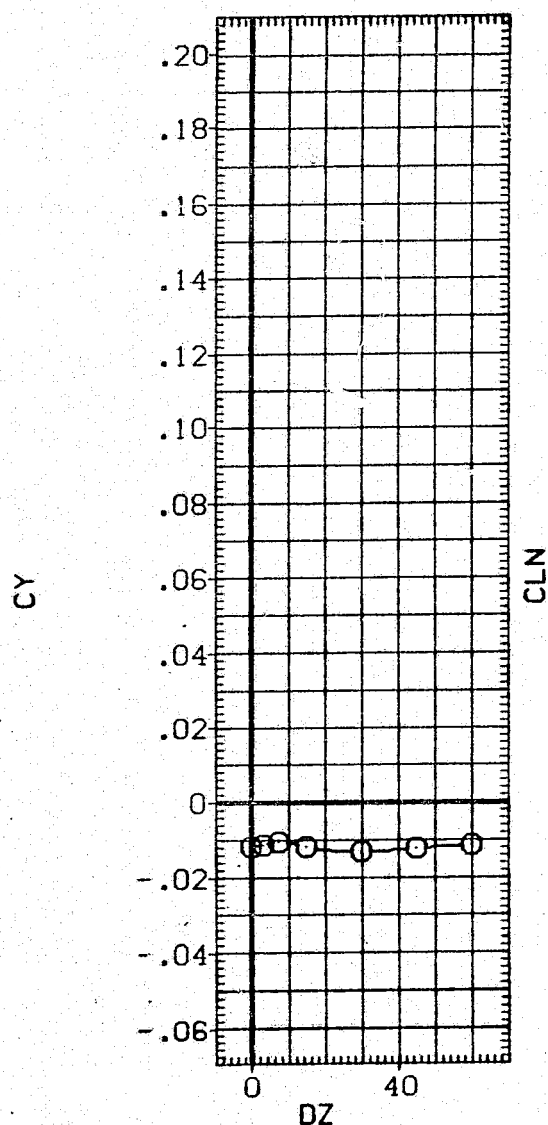


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(C)ALPHA= 10.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CARRIER DATA
(SGNOC1)	CA20 747/0 01 S1 AT38 AT39	CARRIER DATA
(SGNOG1)	CA20 747/1 01 S1 AT38 AT39	CARRIER DATA

ORRB	ELEVON	DX	DY	REFERENCE INFORMATION	
8.000	5.000	.000	.000	SREF	5500.0000 SQ.FT.
8.000	5.000	.000	.000	LREF	327.7800 IN.
				BREF	2348.0400 IN.
				XMRP	1339.3000 IN.XC
				YMRP	.0000 IN.YC
				ZMRP	190.8000 IN.ZC
				SCALE	.0300

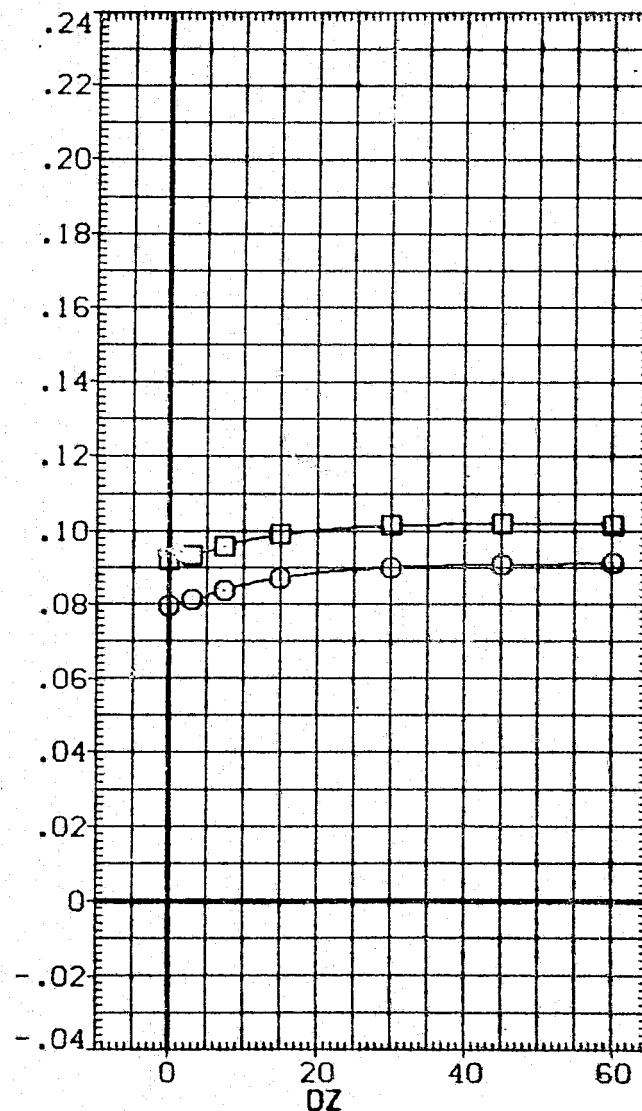
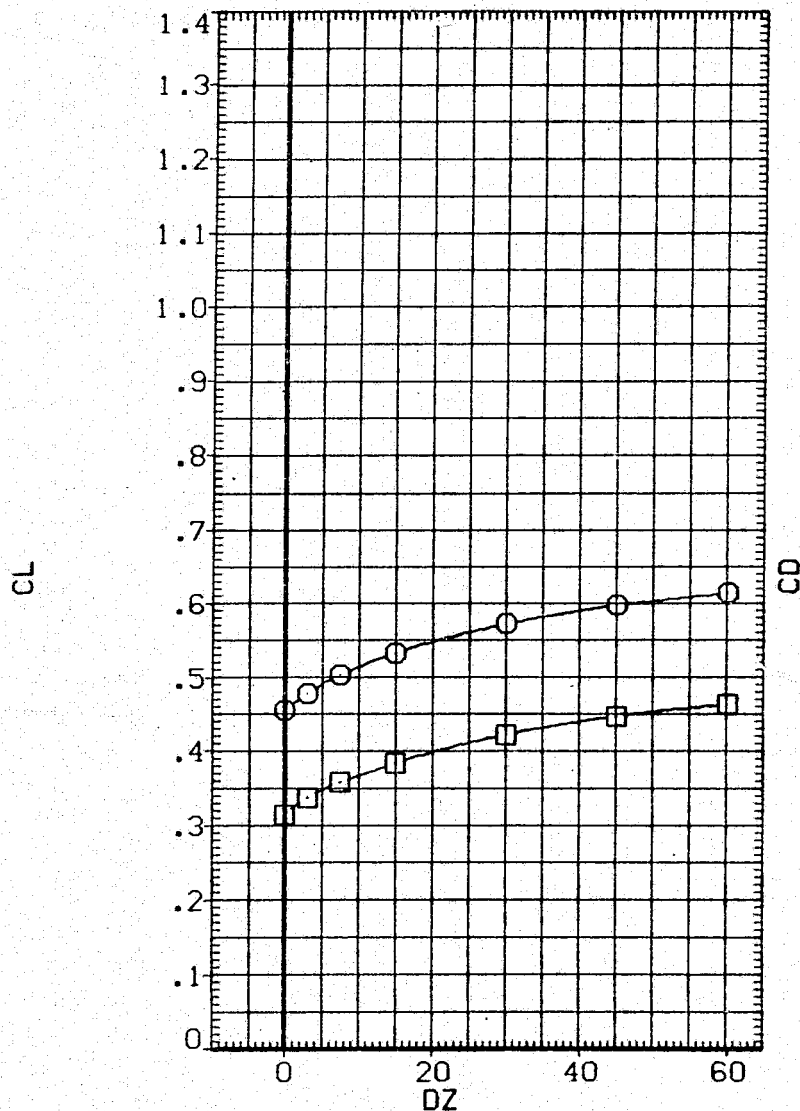


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(A) BETA = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOC1) CA20 747/0 01 S1 AT38 AT39
 (SGNOG1) CA20 747/1 01 S1 AT38 AT39

CARRIER DATA
 CARRIER DATA

IORB ELEVON DX DY
 8.000 5.000 .000 .000
 8.000 5.000 .000 .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1333.5000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.6000 IN.ZC
 SCALE .0300

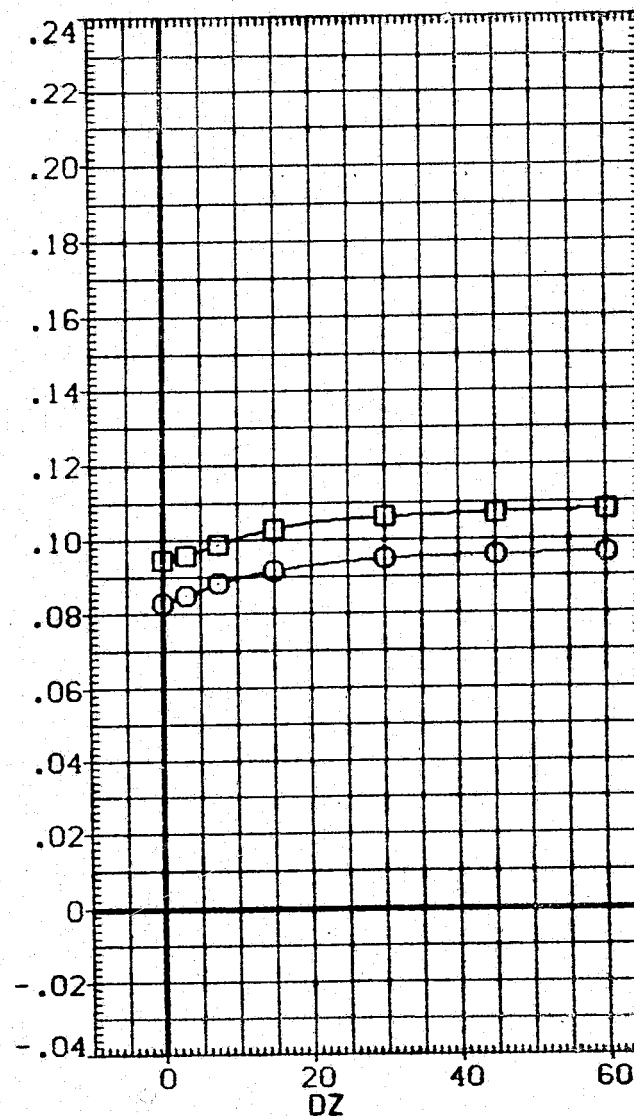
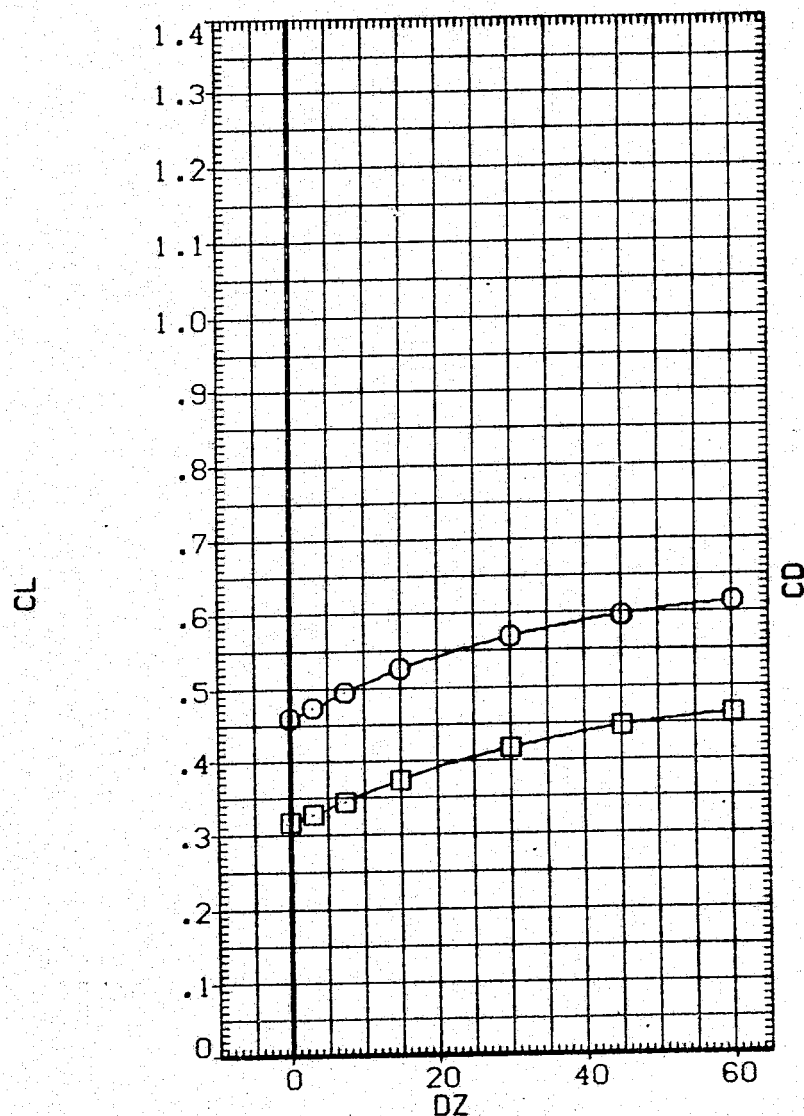


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (B) BETA = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(SGNOC1) ☐ CA20 747/0 01 S1 AT38 AT39
 (SGNOG1) ☐ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA
 CARRIER DATA

IORB 8.000
 ELEVON 5.000
 DX .000
 DY .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.9000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

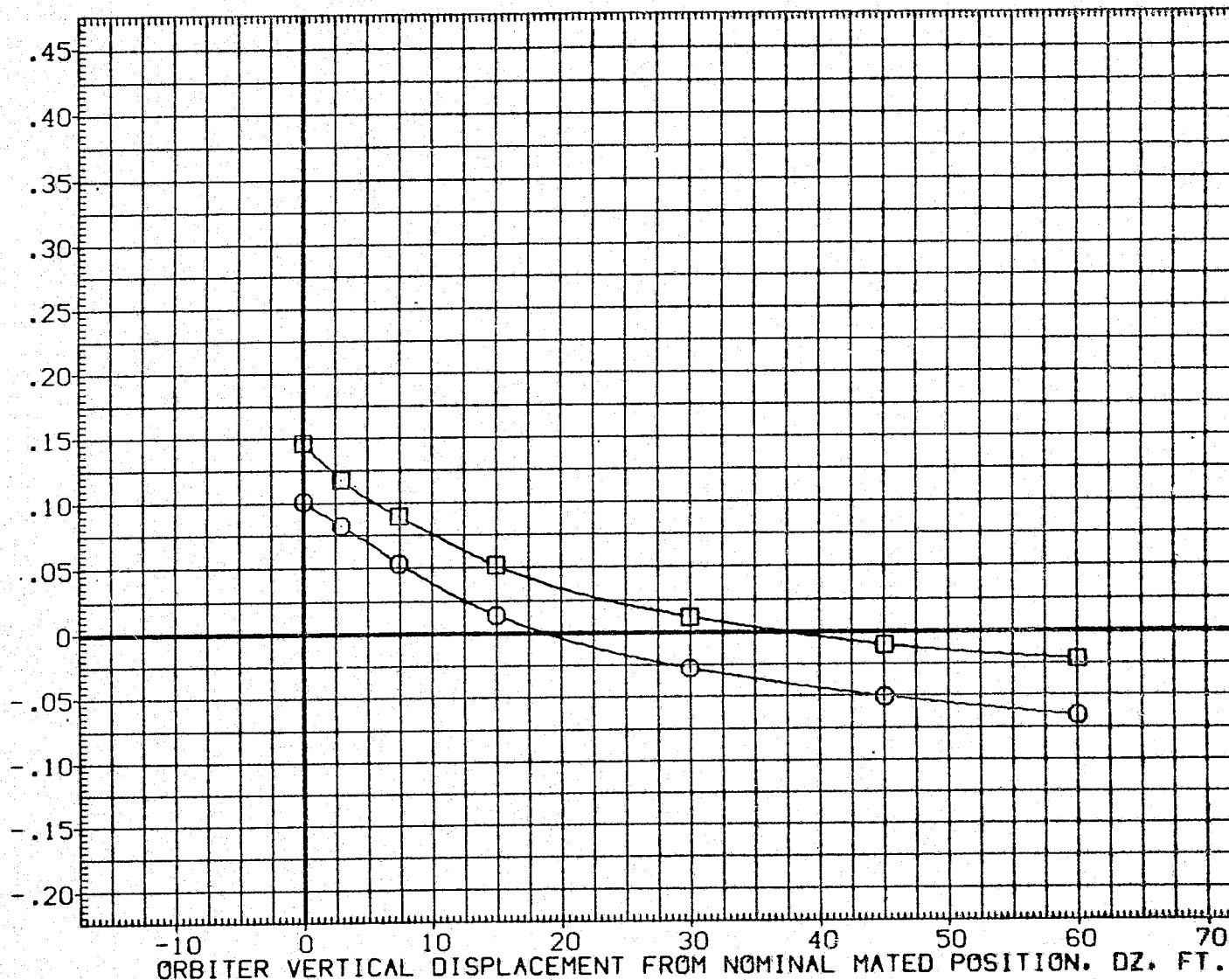




FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(A) BETA = -5.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOC1) 	CA20 747/0 01 S1 AT38 AT39
(SGNOG1) 	CA20 747/1 01 S1 AT38 AT39

CARRIER DATA
CARRIER DATA

IORB	ELEVON	DX	DY
8.000	5.000	.000	.000
8.000	5.000	.000	.000

REFERENCE INFORMATION

SREF	5500.0000	50. FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XHRP	1339.5000	IN. XC
YHRP	.0000	IN. YC
ZHRP	190.8000	IN. ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

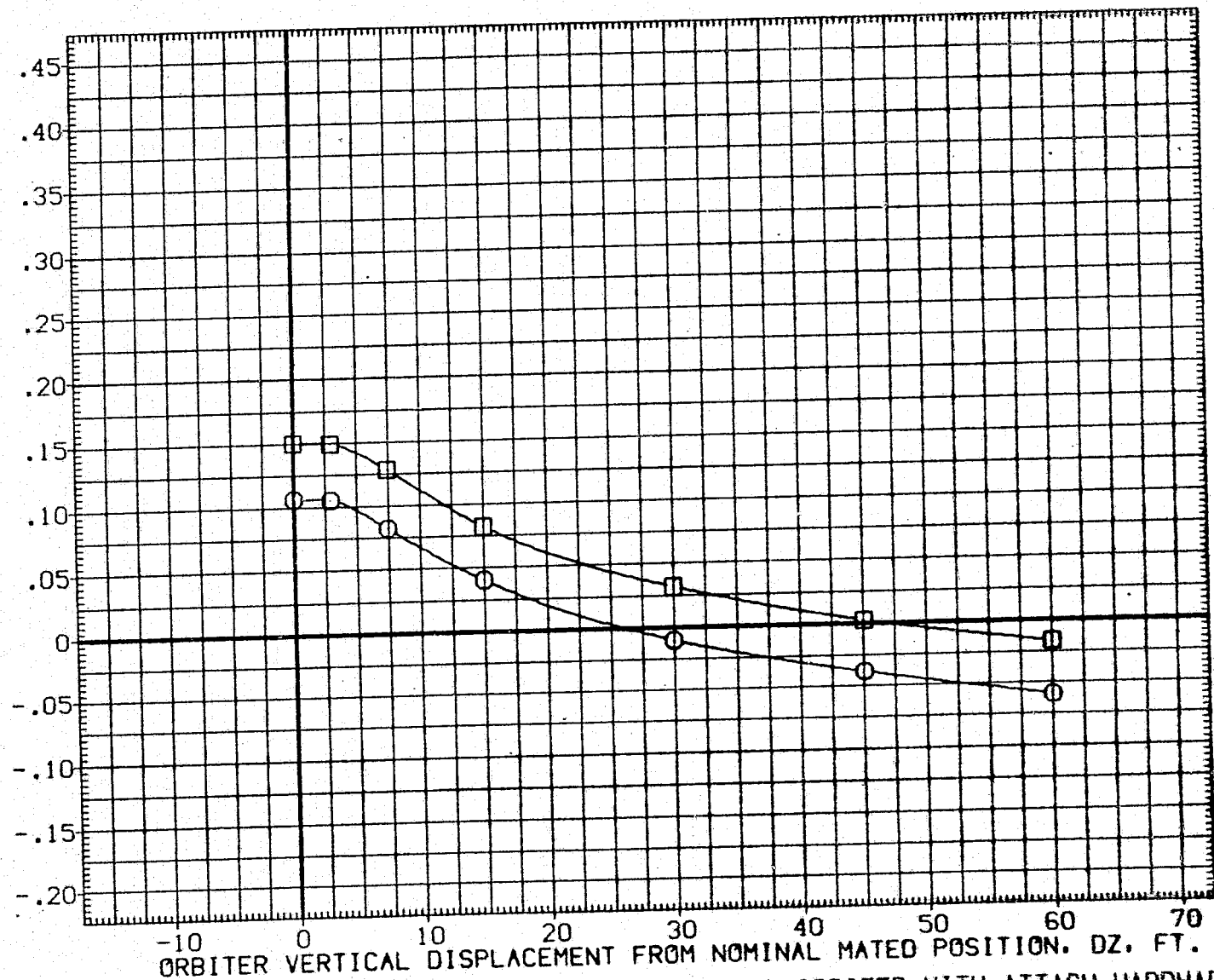


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(B) BETA = .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOC1) ○	CA20 747/0 01 S1 AT38 AT39
(SGNOG1) □	CA20 747/1 01 S1 AT38 AT39

CARRIER DATA
CARRIER DATA

IORB	ELEVON	DX	DY
8.000	5.000	.000	.000
8.000	5.000	.000	.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN.
XMRP	1339.9000 IN.XC
YMRP	.0000 IN.YC
ZMRP	190.8000 IN.ZC
SCALE	.0300

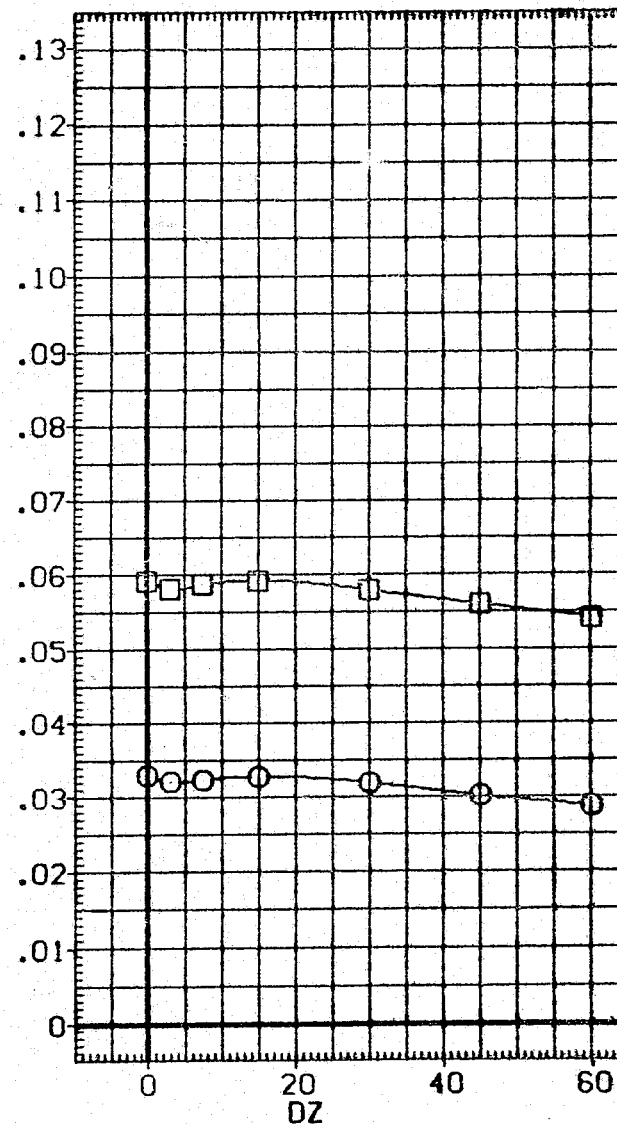
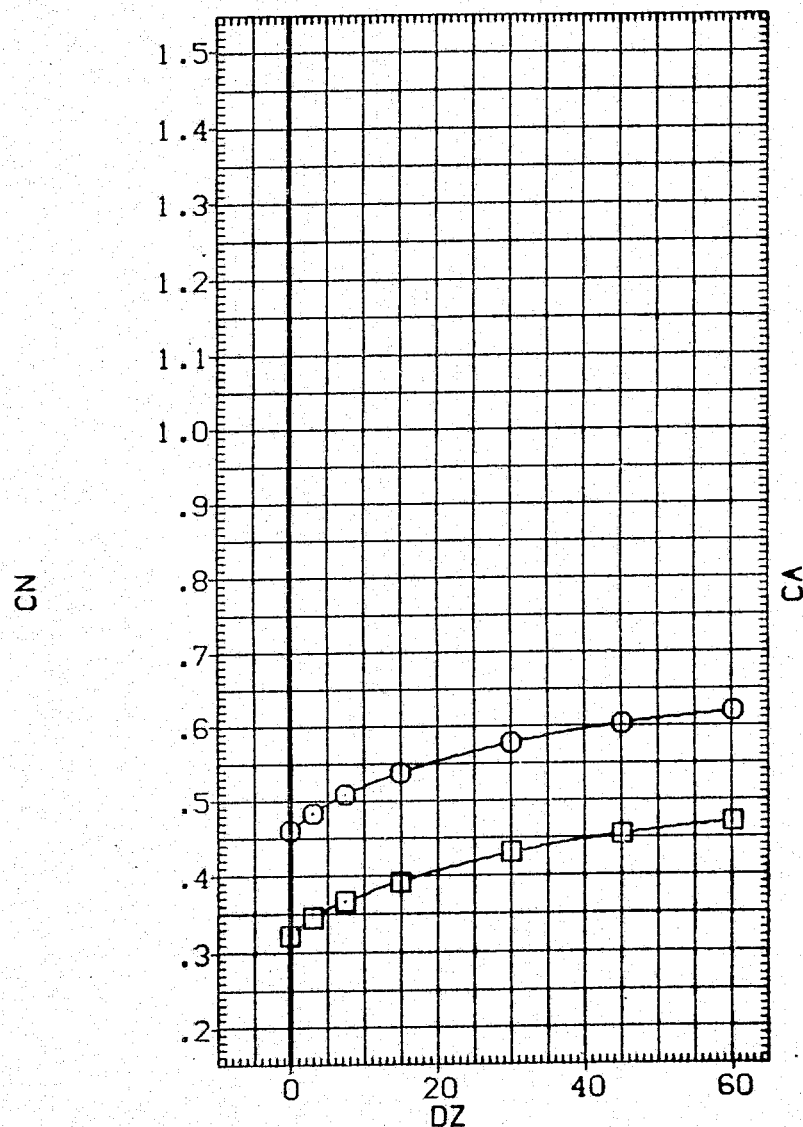


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(A) BETA = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(SGNOC1) CA20 747/0 01 S1 AT38 AT39
 (SGNOG1) CA20 747/1 01 S1 AT38 AT39

CARRIER DATA
 CARRIER DATA

IORB

ELEVON

DX

DY

REFERENCE INFORMATION

8.000
 8.000

5.000
 5.000

.000
 .000

.000
 .000

SREF 5500.0000
 LREF 327.7800
 BREF 2348.0400
 XMRP 1339.9000
 YMRP .0000
 ZMRP 190.8500
 SCALE .0300

SQ.FT.
 IN.
 IN.
 IN.XC
 IN.YC
 IN.ZC

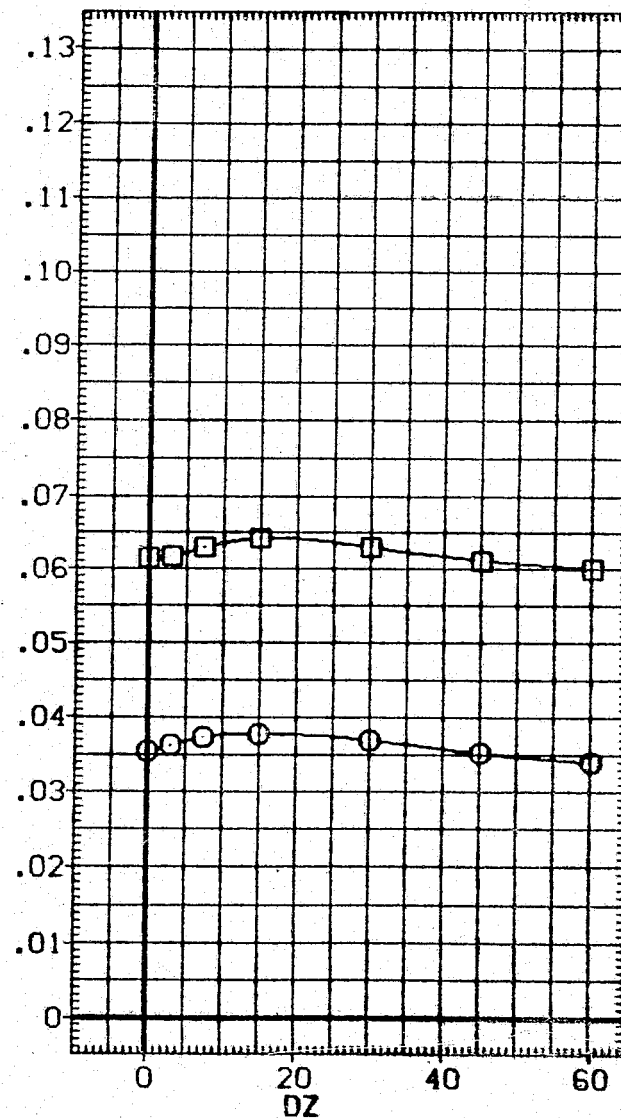
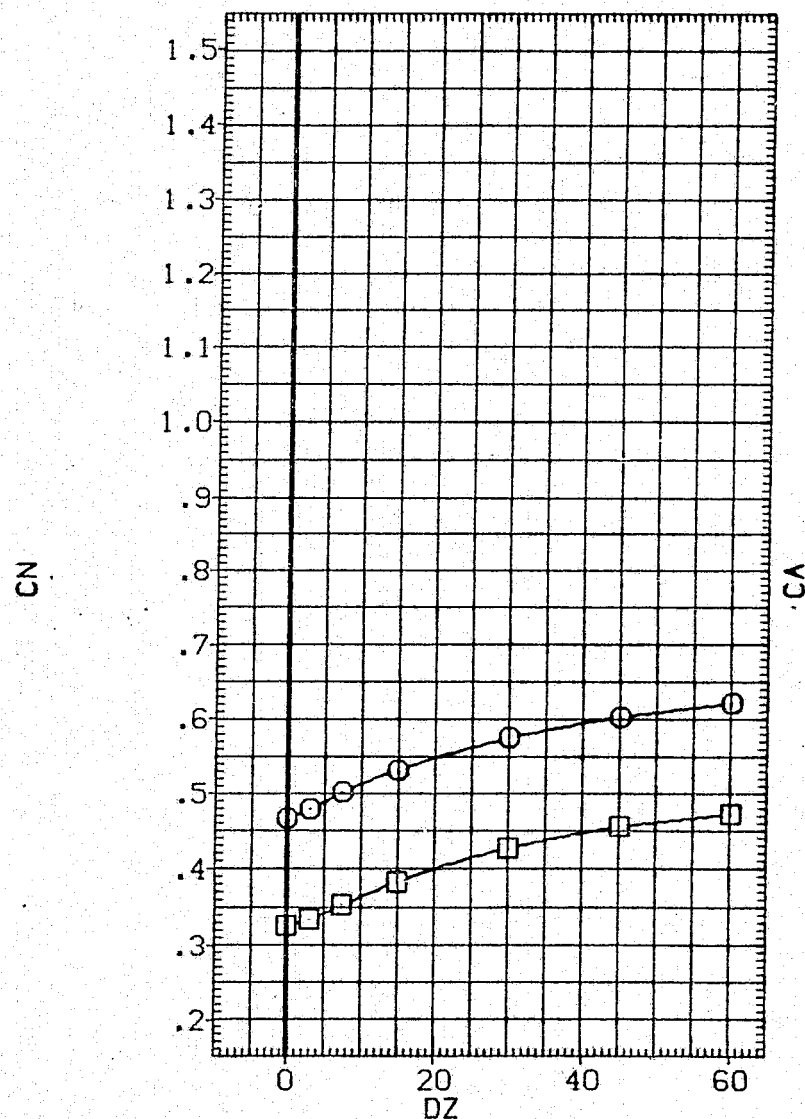


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(B) BETA = .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOC1)	CA20 747/0 01 S1 AT38 AT39
(SGNOG1)	CA20 747/1 01 S1 AT38 AT39

	IORB	ELEVON	DX	DY
CARRIER DATA	8.000	5.000	.000	.000
CARRIER DATA	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	3500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XHRP	1339.9000	IN.XC
YHRP	.0000	IN.YC
ZHRP	190.8000	IN.ZC
SCALE	.0300	

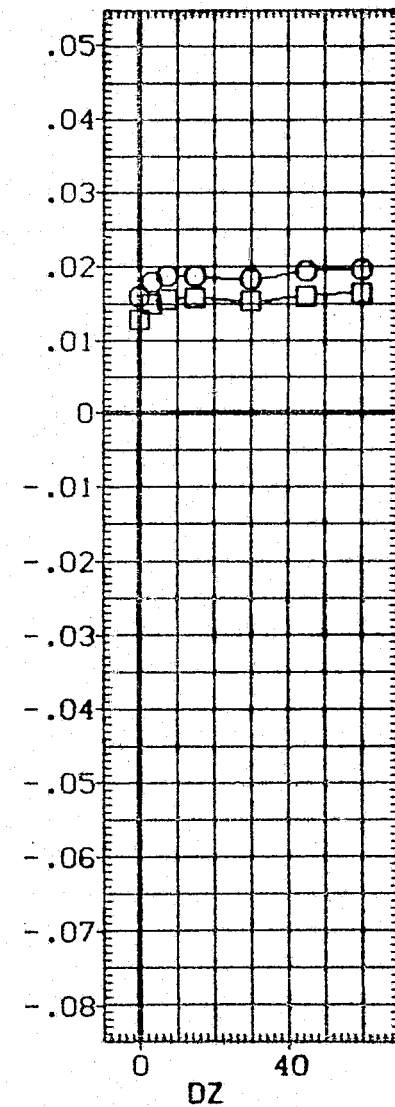
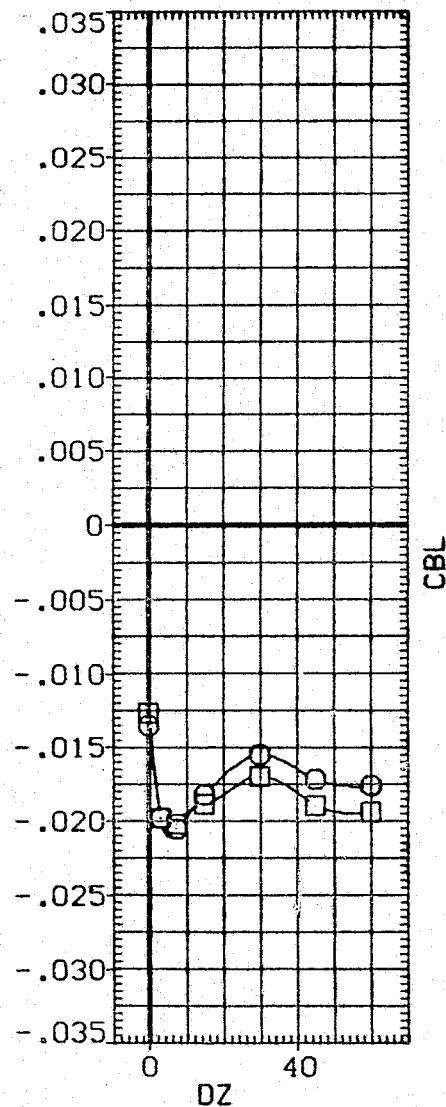
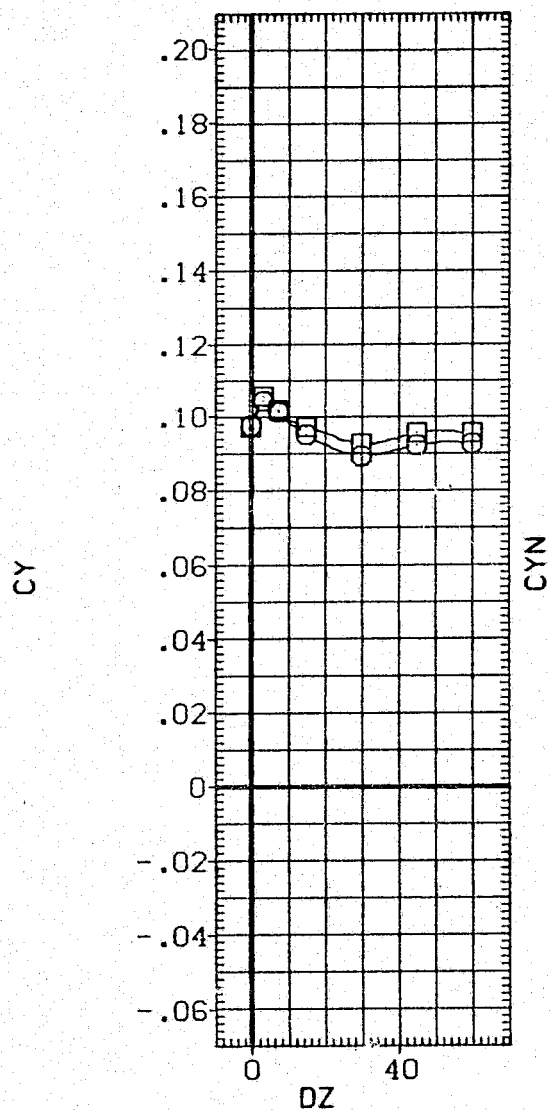


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (A) BETA = -5.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOC1)	CA20 747/0 01 S1 AT38 AT39
(SGNOG1)	CA20 747/1 01 S1 AT38 AT39

	IORB	ELEVON	DX	DY
CARRIER DATA	8.000	5.000	.000	.000
CARRIER DATA	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

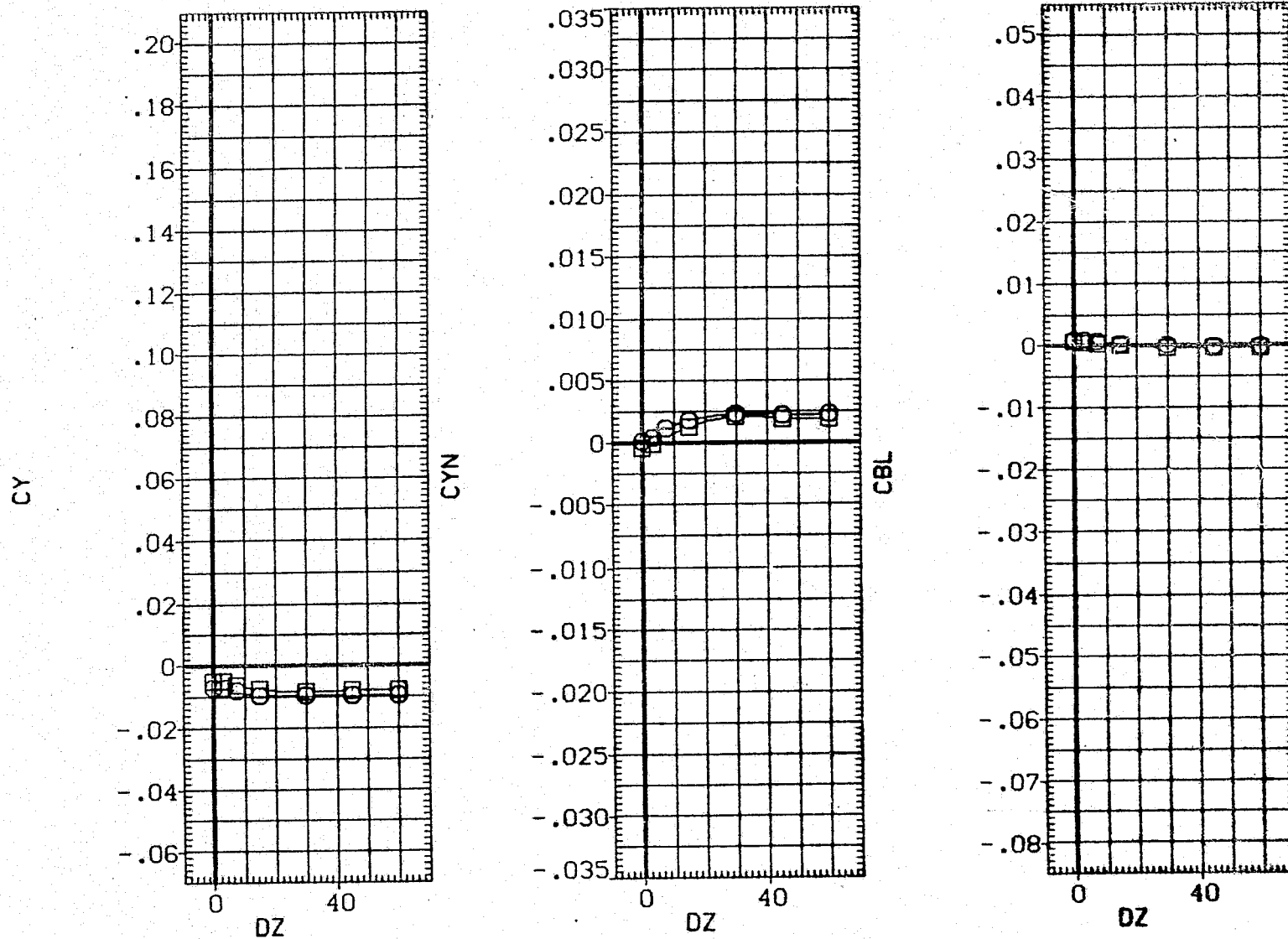


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(B) BETA = .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOC1)	CA20 747/0 01 S1 AT38 AT39
(SGNOG1)	CA20 747/1 01 S1 AT38 AT39

CARRIER DATA	IORB	ELEVON	DX	DY
CARRIER DATA	8.000	5.000	.000	.000
	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

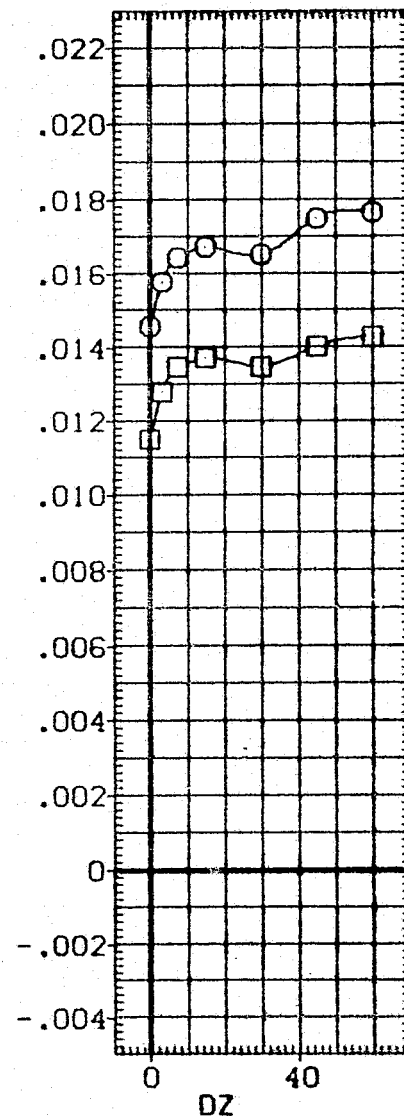
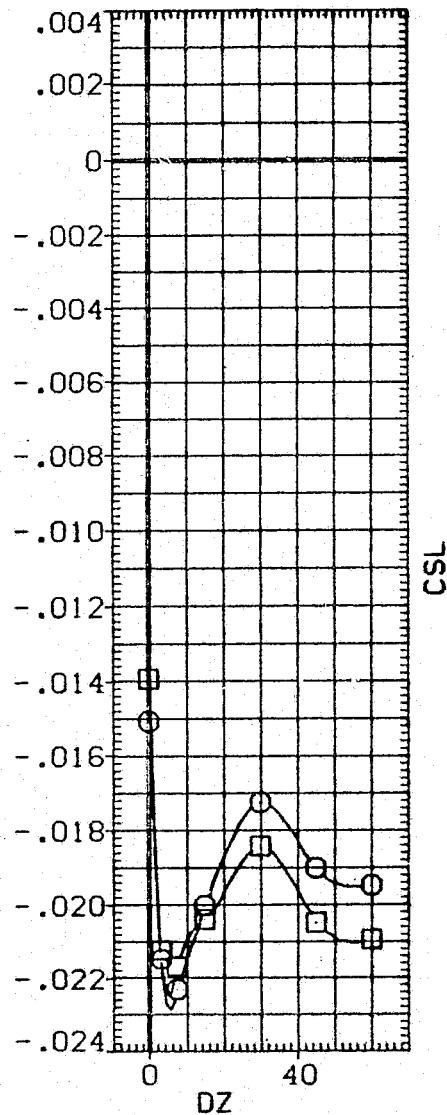
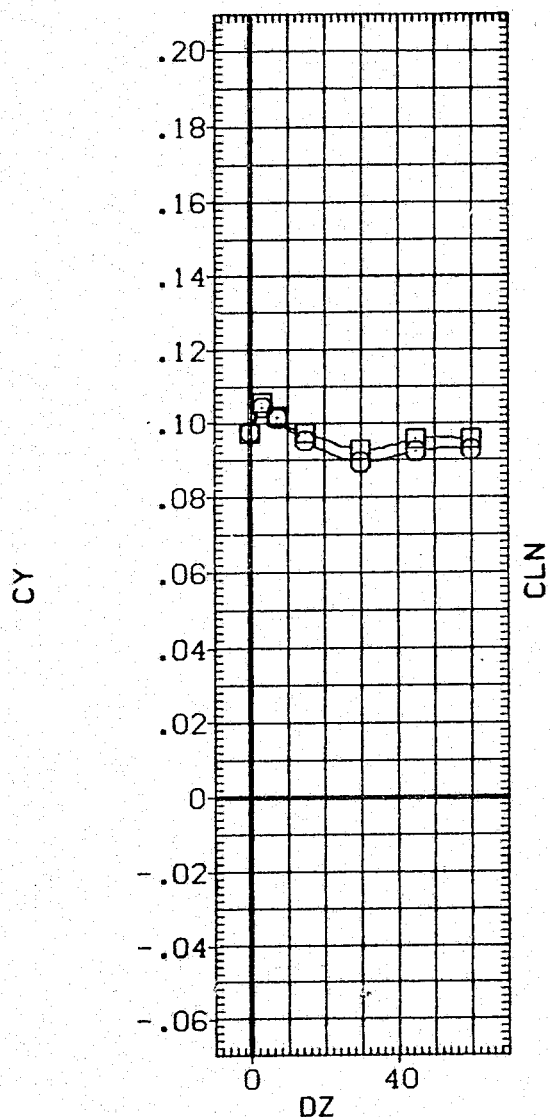


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (A) BETA = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(SGNOC1) CA20 747/0 01 S1 AT38 AT39
(SGNOG1) CA20 747/1 01 S1 AT38 AT39

CARRIER DATA
CARRIER DATA

IORB

ELEVON

DX

DY

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

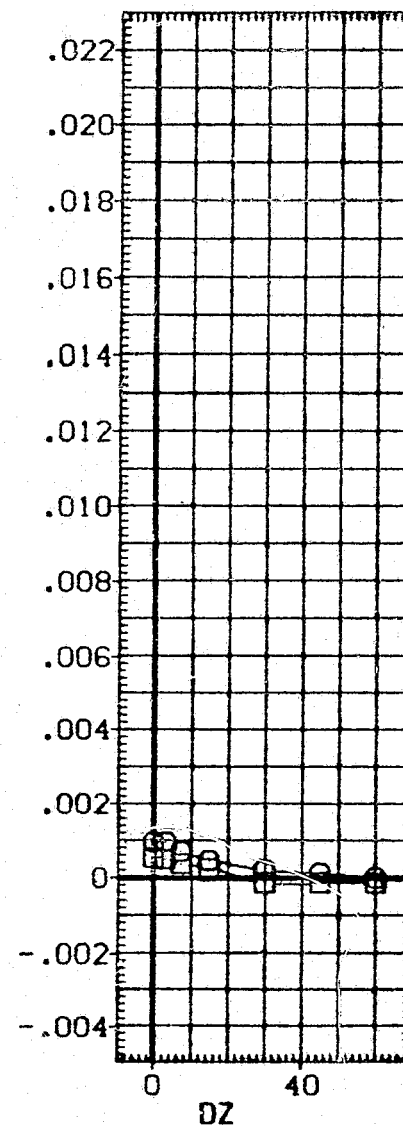
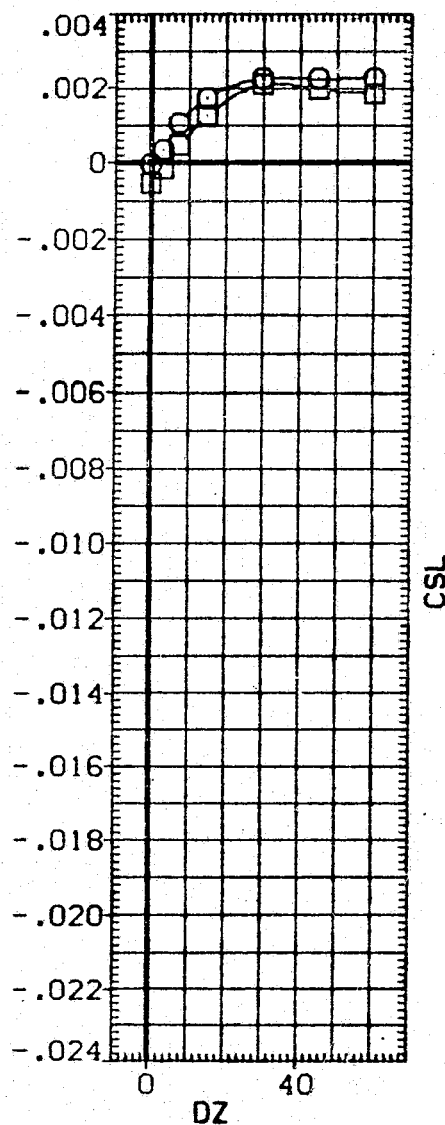
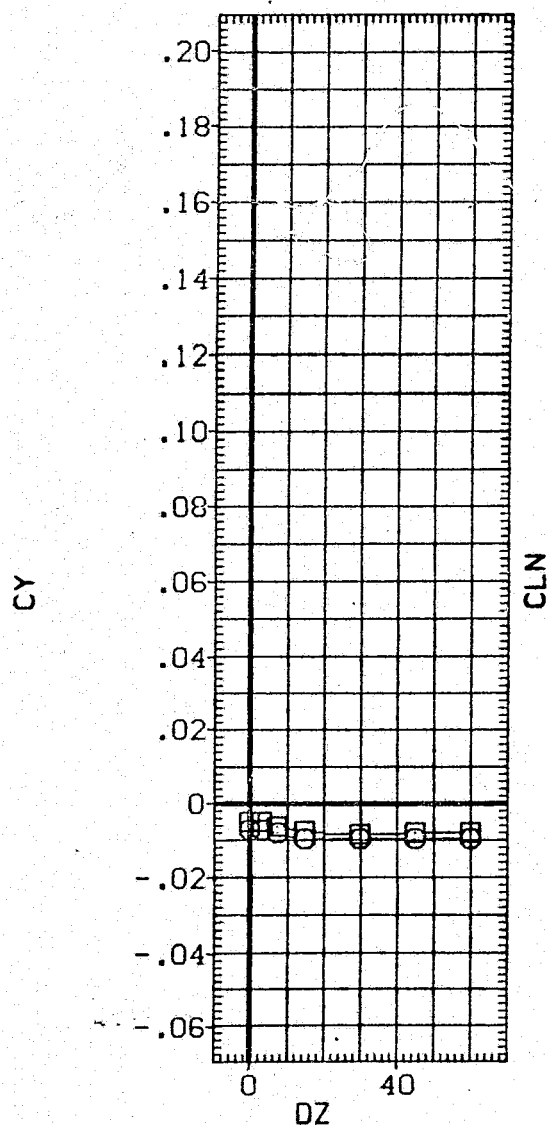


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(B) BETA = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

BETAC .000 BETA0 .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 50.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

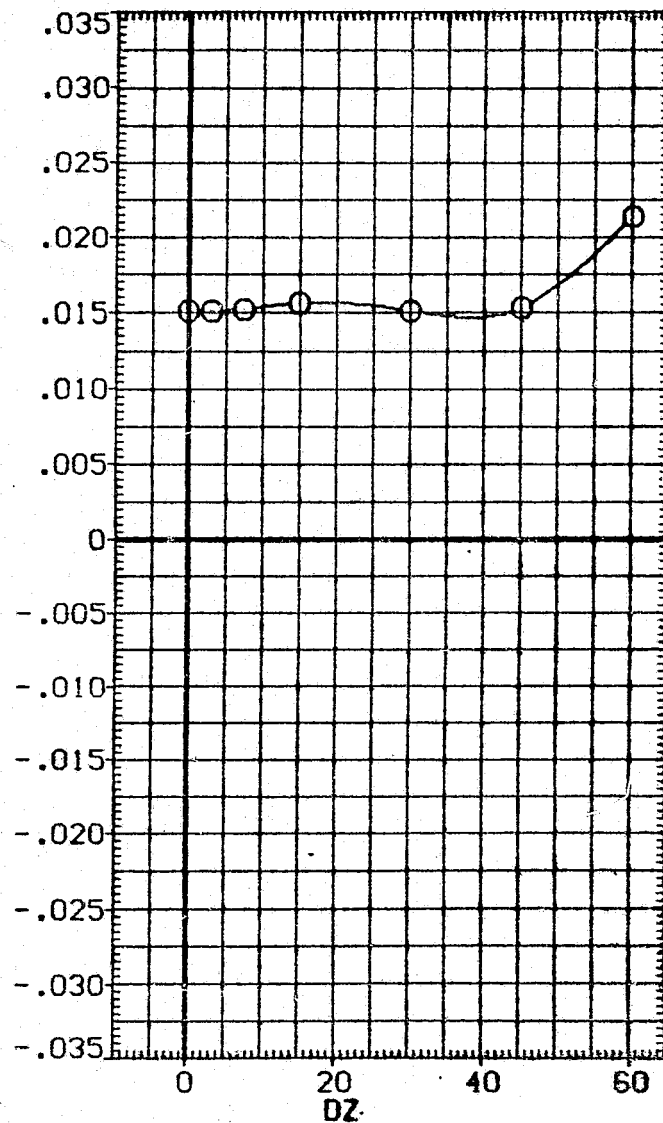
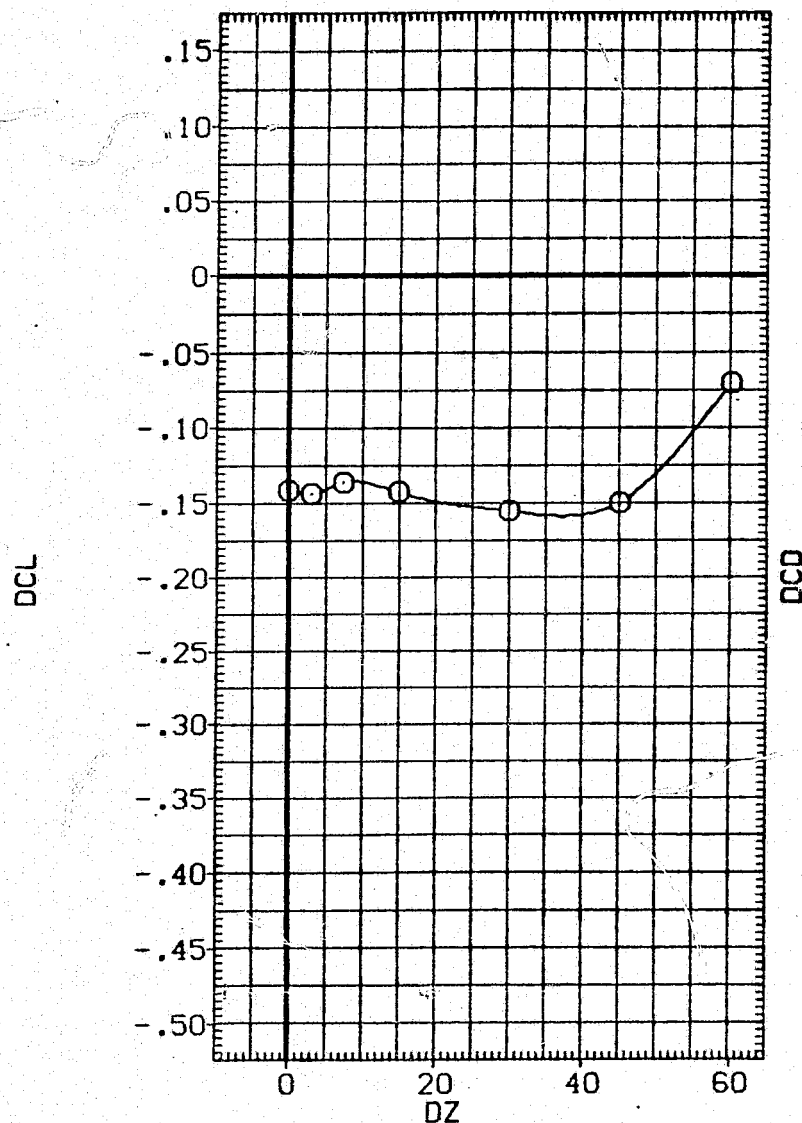


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A) ALPHA= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (WGNRCA) ○ CA20 747/1 01 S1 AT38 AT30 CARRIER DATA

BETAC BETAO DX DY
 .000 .000 .000 .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.9000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

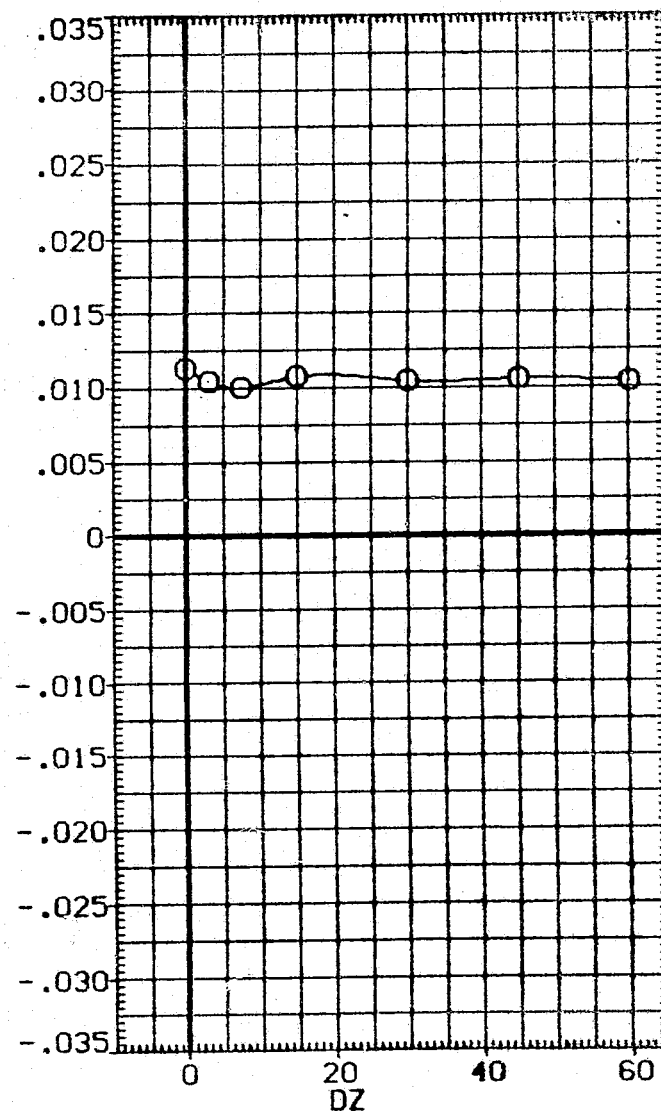
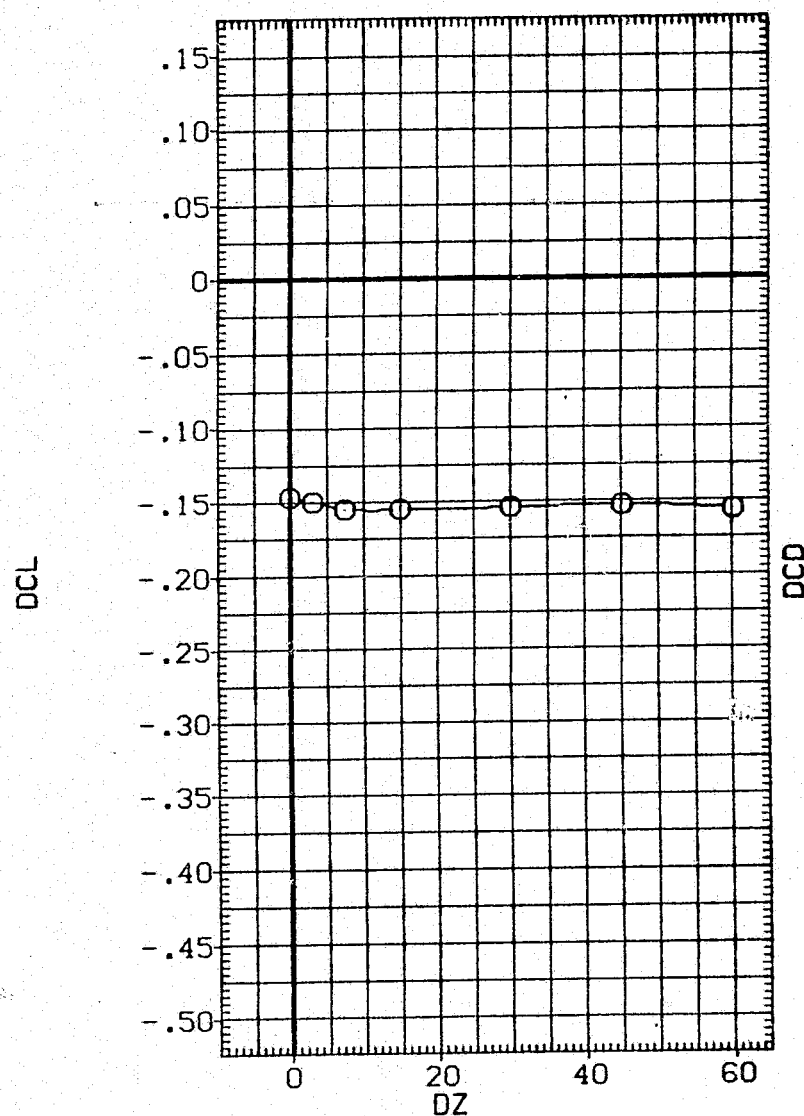


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (B)ALPHA= 6.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

BETAC BETAO DX DY
.000 .000 .000 .000

REFERENCE INFORMATION
SREF 5500.0000 50.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

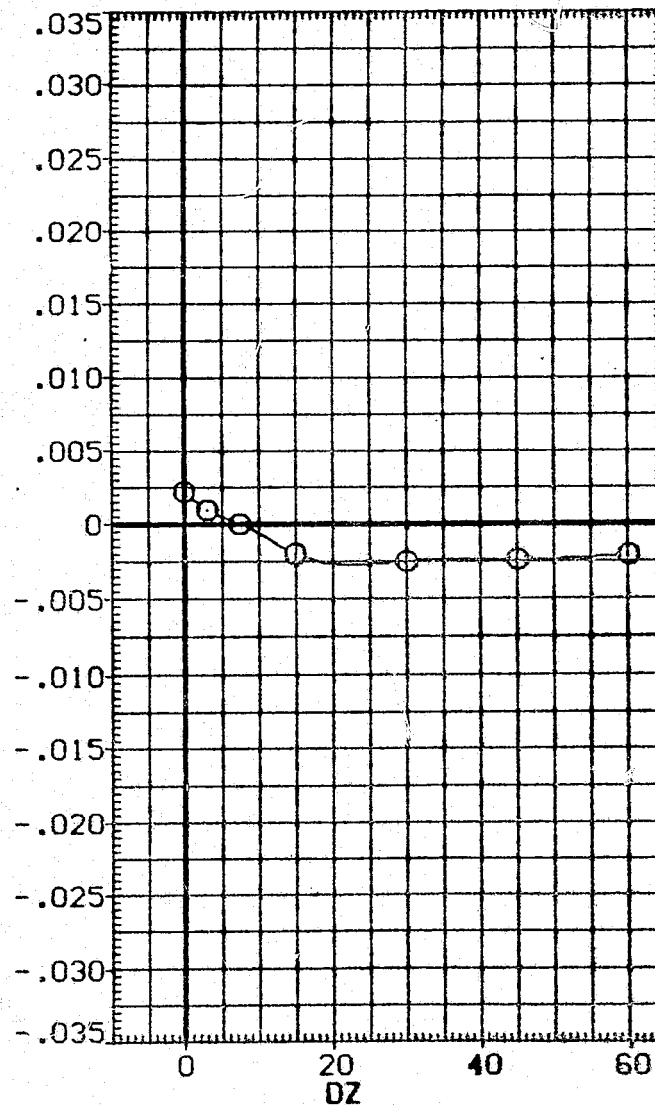
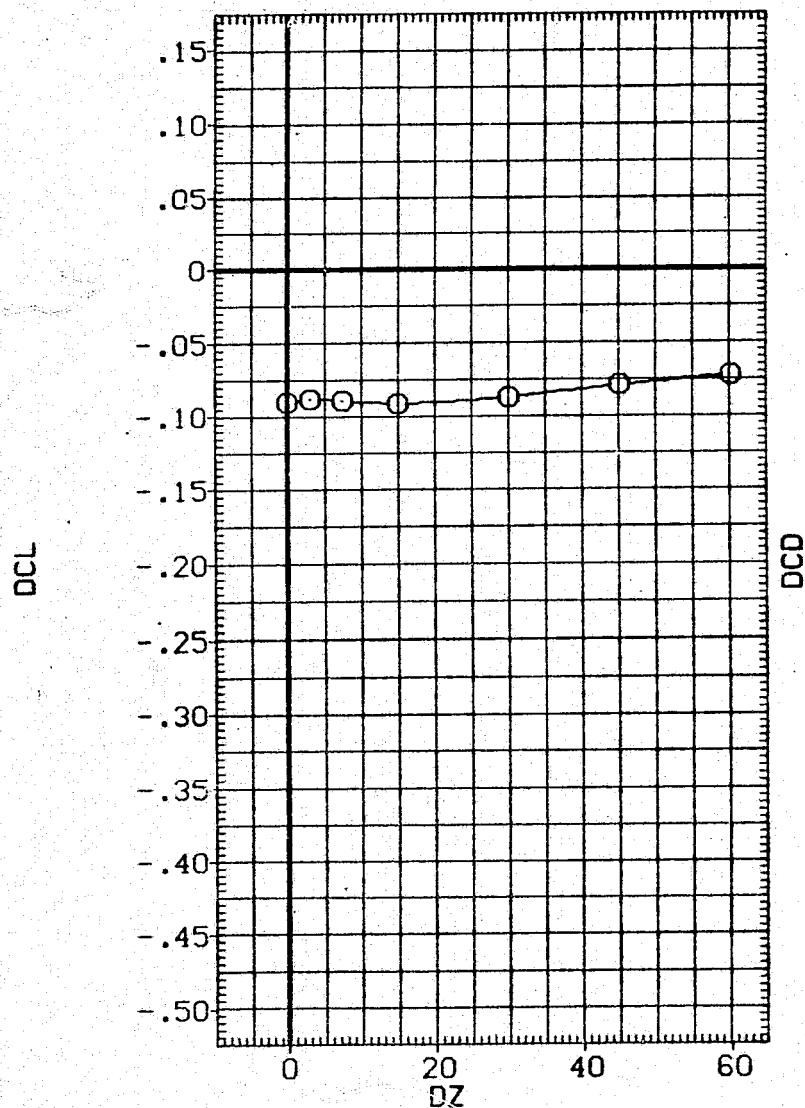


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(C)ALPHA= 10.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) O CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

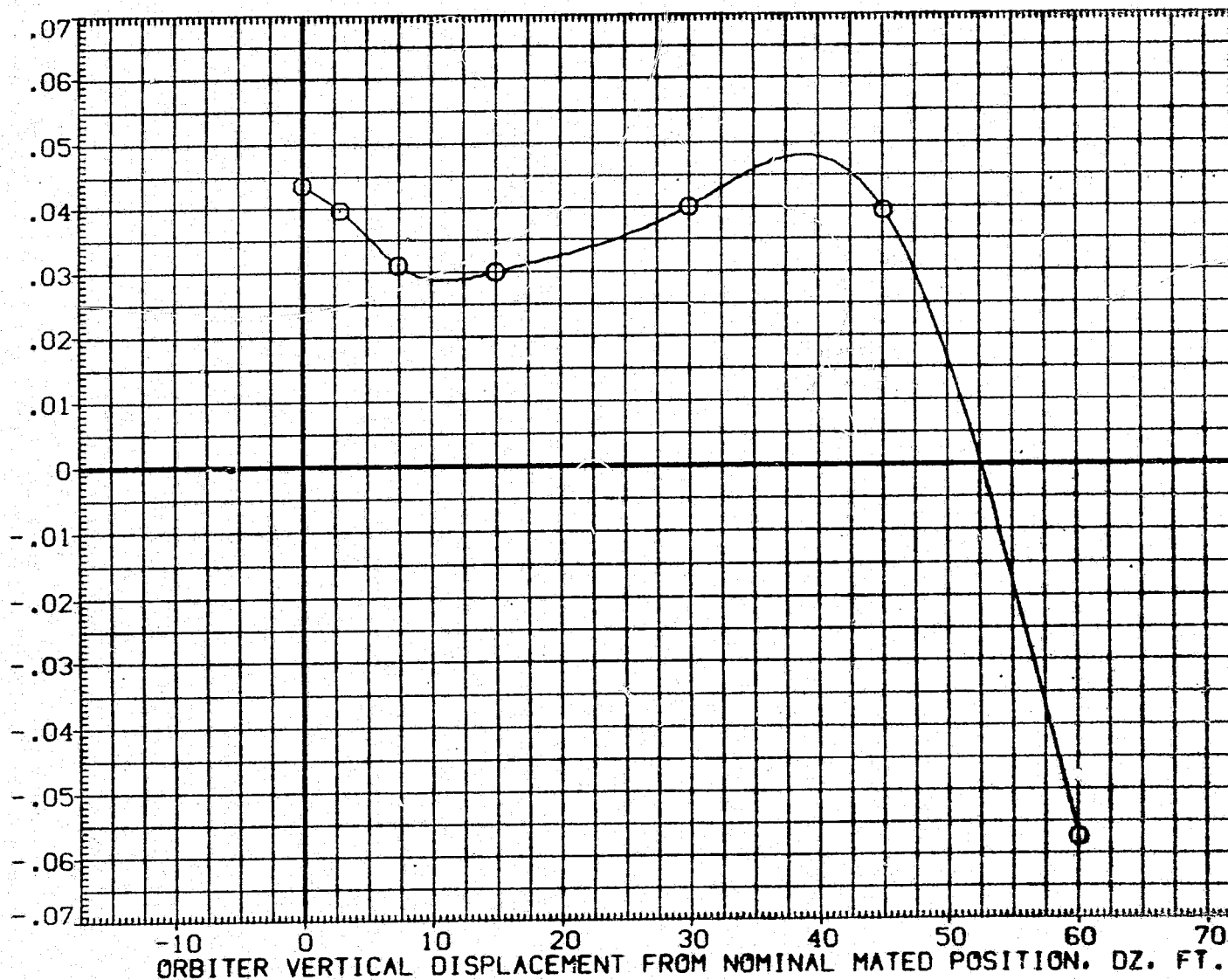


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(A)ALPHA= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (WGNRCA) O CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

BETAC .000
 BETAO .000
 DX .000
 DY .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.9000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

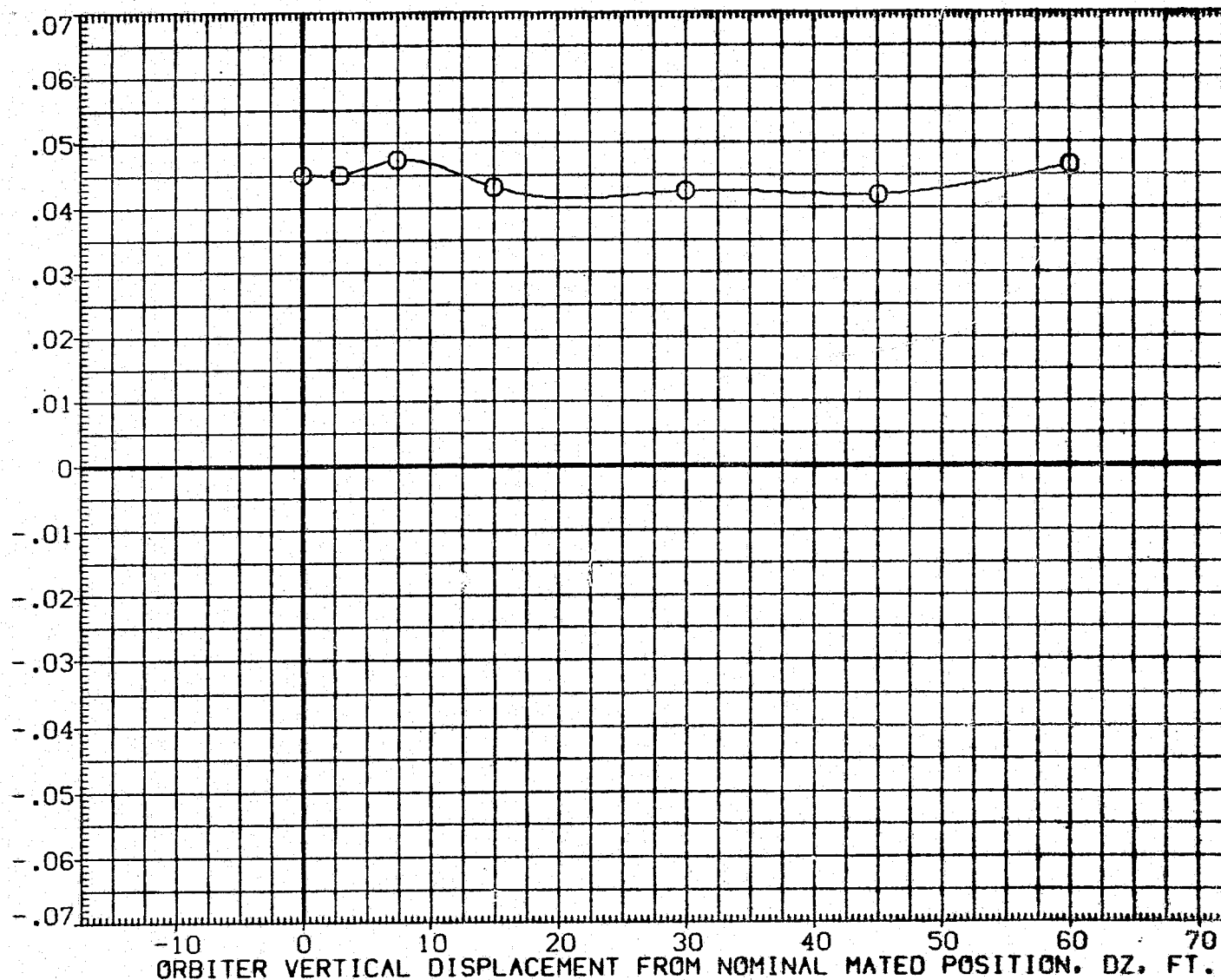


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (B)ALPHA= 6.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) O CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

BETAC .000 BETA0 .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

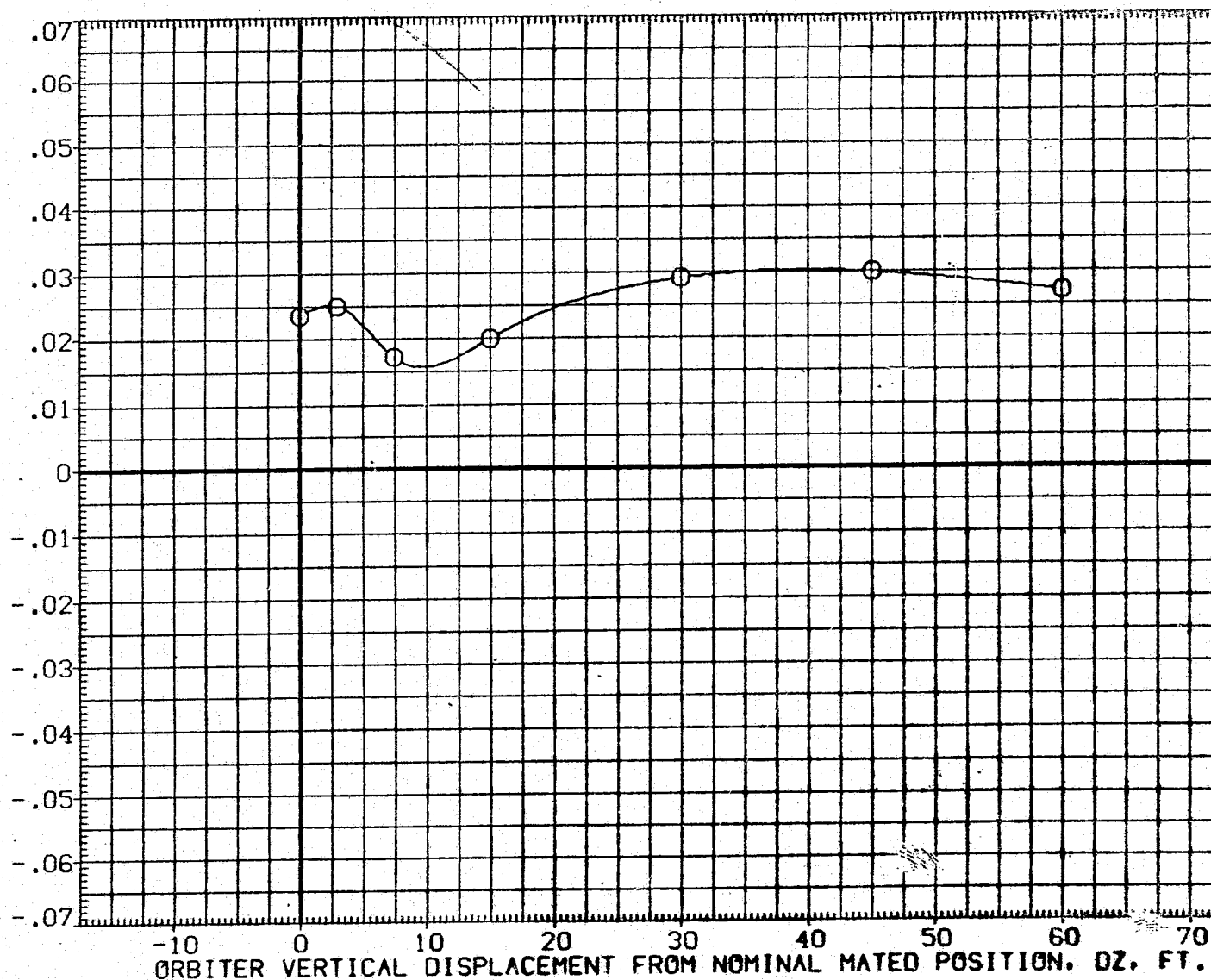


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(C)ALPHA= 10.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION	
.000	.000	.000	.000	SREF 5500.0000	SQ.FT.
				LREF 327.7800	IN.
				BREF 2348.0400	IN.
				XMRP 1339.9000	IN.XC
				YMRP .0000	IN.YC
				ZMRP 190.6000	IN.ZC
				SCALE .0300	

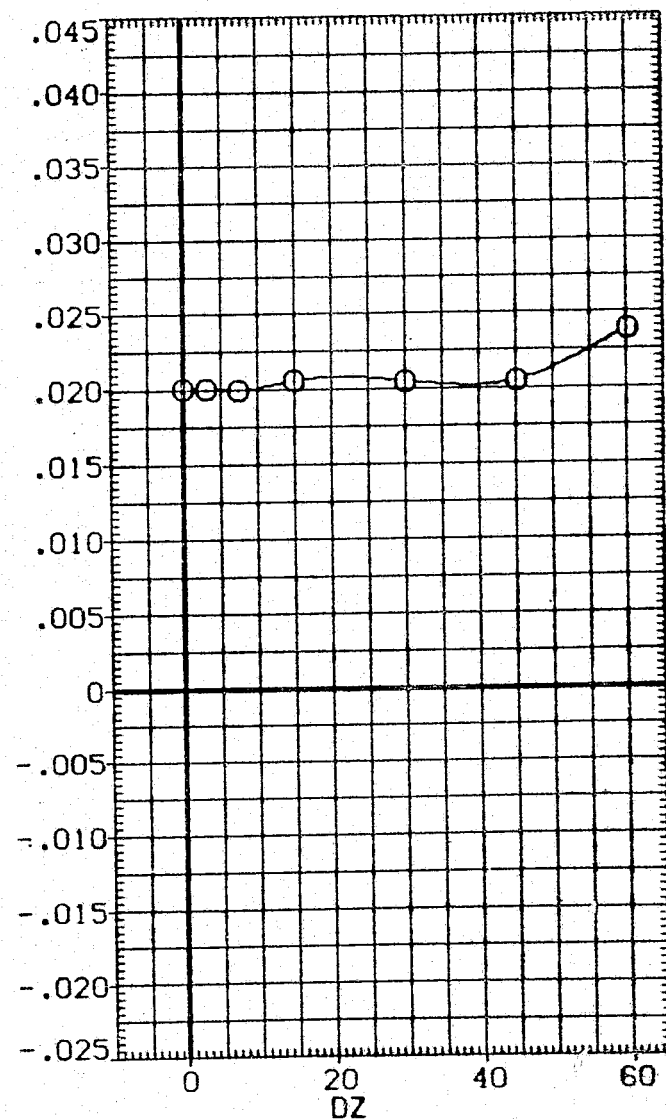
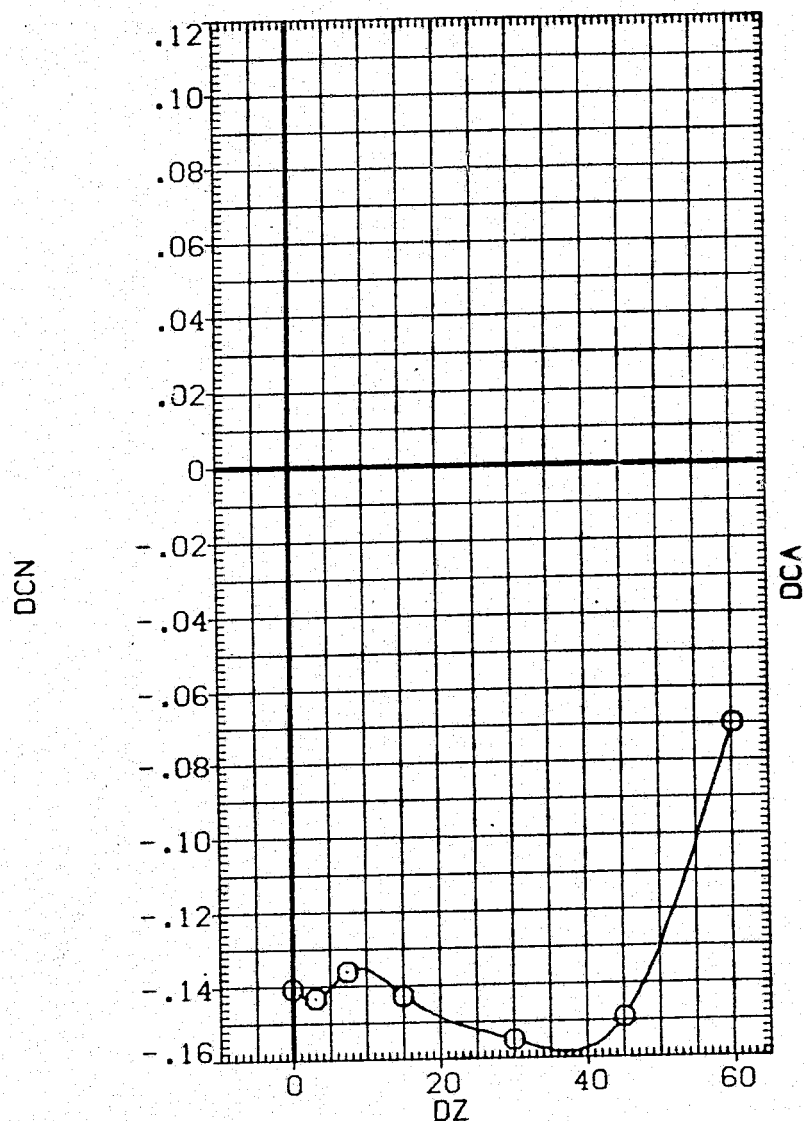


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A) ALPHA = 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (WGNRCA) ○ CA20 747/1 01 SI AT38 AT39 CARRIER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION	
.000	.000	.000	.000	SREF 5500.0000	SQ.FT.
				LREF 327.7800	IN.
				BREF 2340.0400	IN.
				XMRP 1339.5000	IN.XC
				YMRP .0000	IN.YC
				ZMRP 190.0000	IN.ZC
				SCALE .0300	

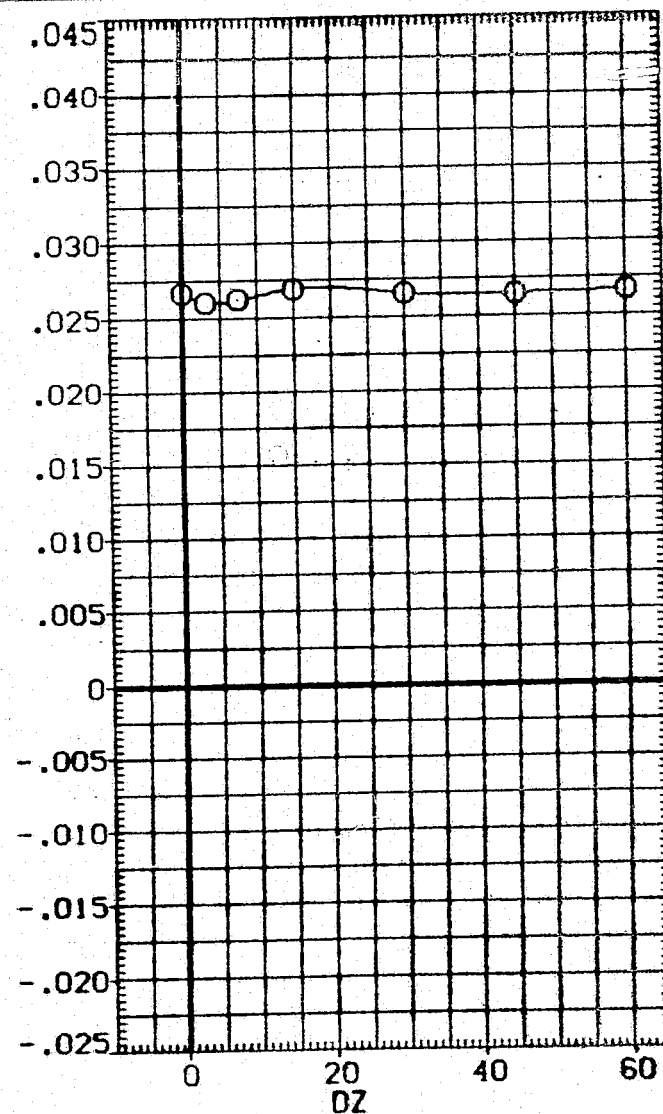
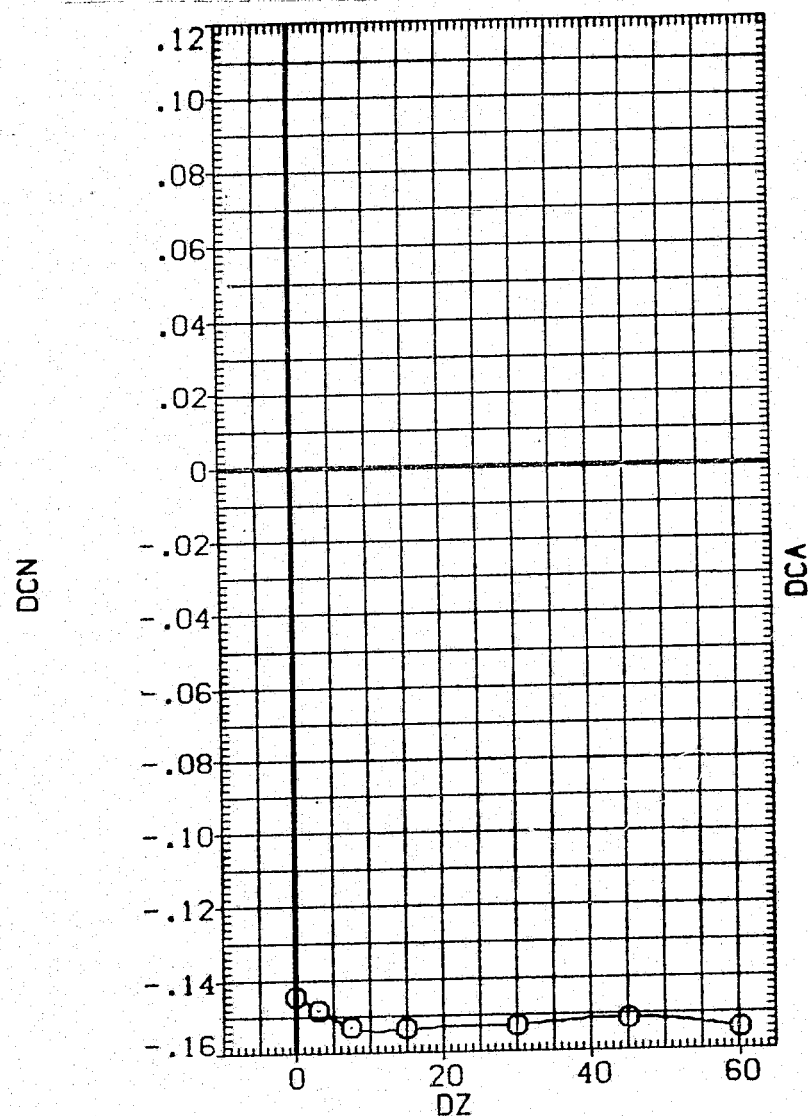


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (B)ALPHA= 6.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) ○ CA20 747/1 01 SI AT38 AT39

CARRIER DATA

BETAC BETAO DX DY
.000 .000 .000 .000

REFERENCE INFORMATION
SREF 5500.0000 50.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

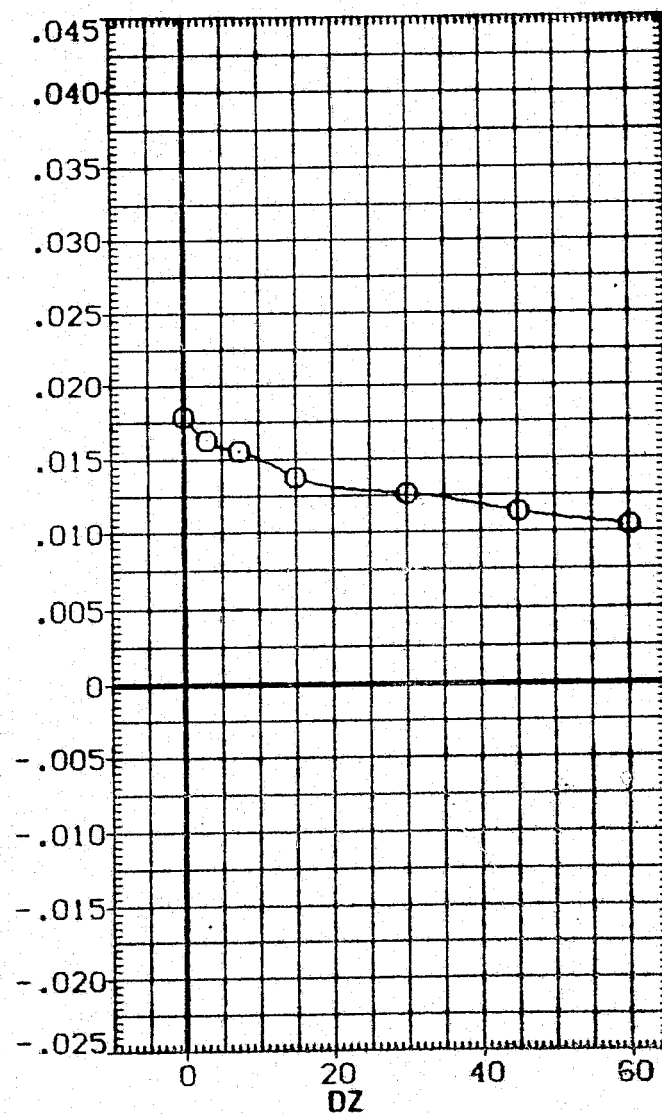
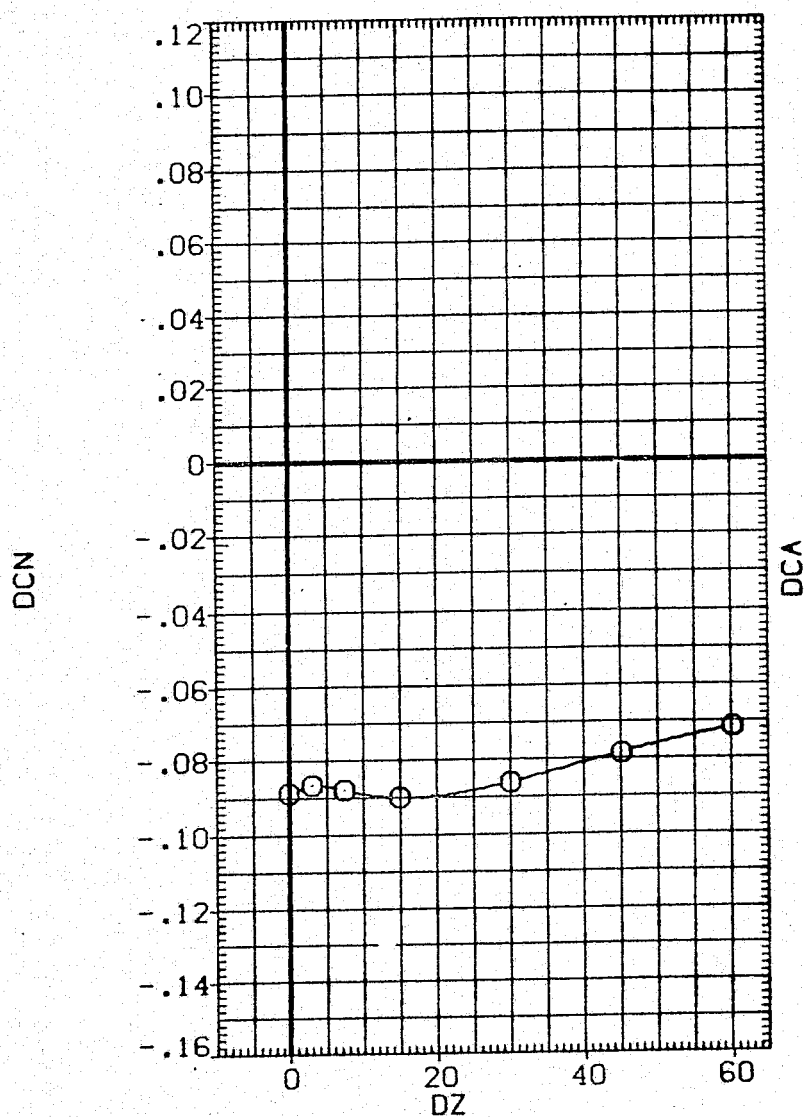


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(C)ALPHA= 10.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) O CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

BETAC .000
BETA0 .000
DX .000

DY

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.3000 IN.ZC
SCALE .0300

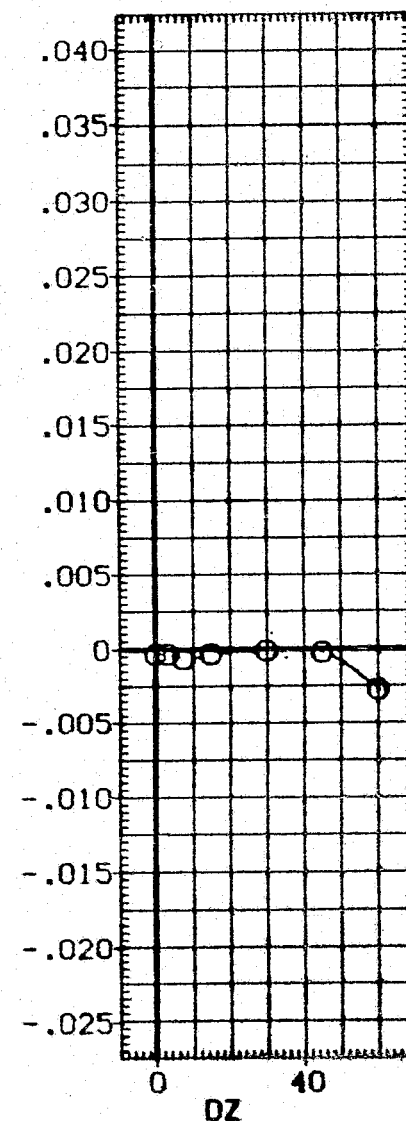
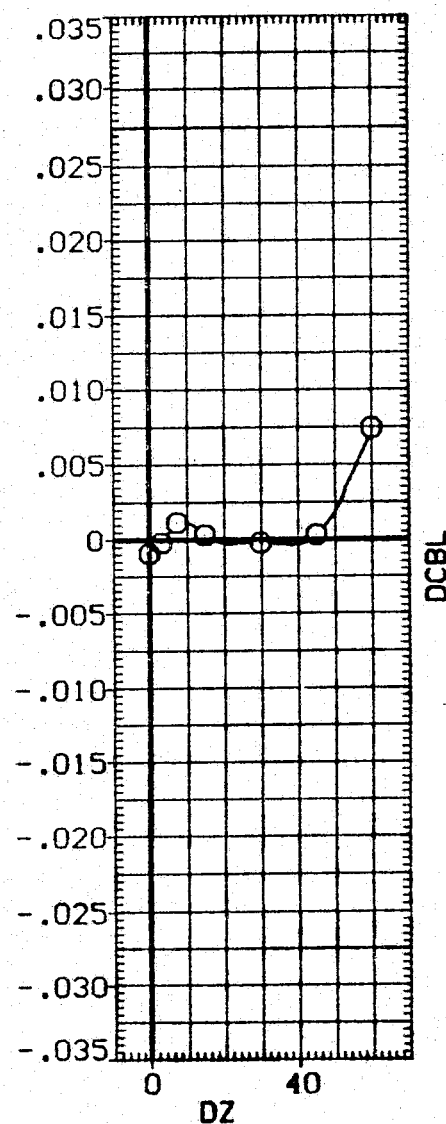
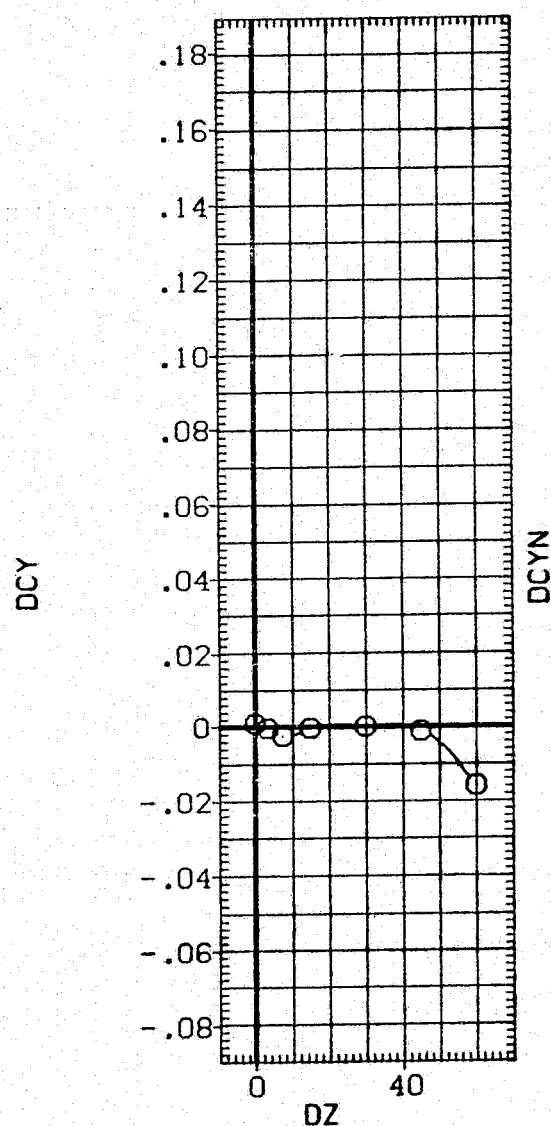


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A)ALPHA= 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) O CA20 747/1 01 S1 AT38 AT39

CARRIER DATA BETAC .000 BETAD .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

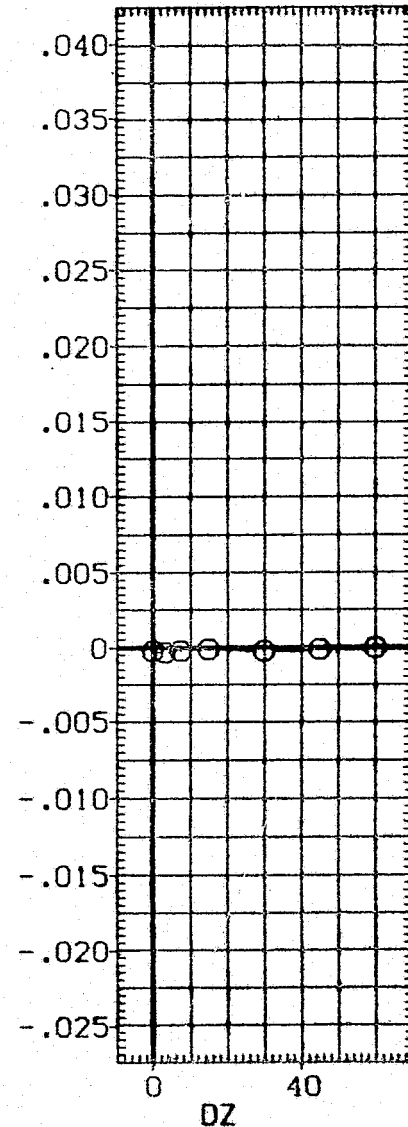
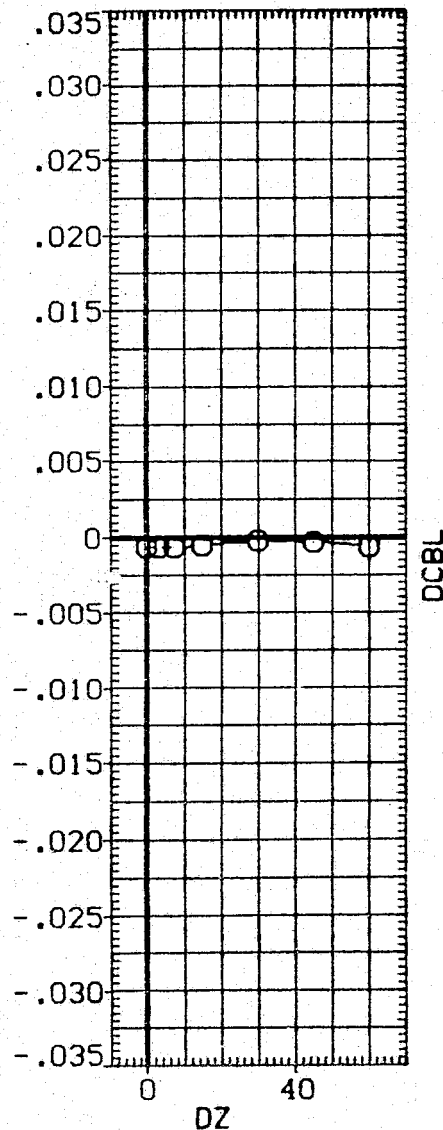
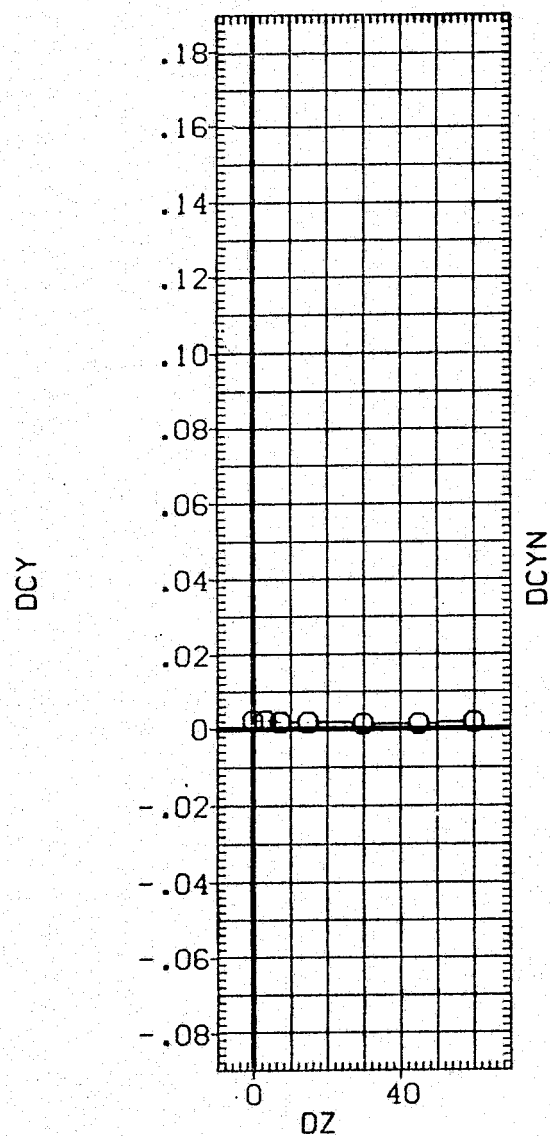


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(B) ALPHA = 6.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

BETAC .000 BETAD .000 DX .000

DY

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.8000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.0000	IN.ZC
SCALE	.0300	

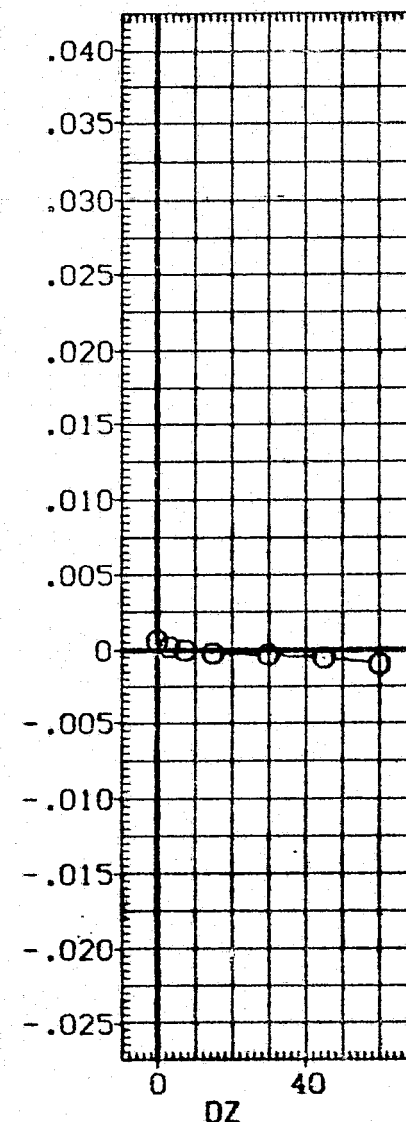
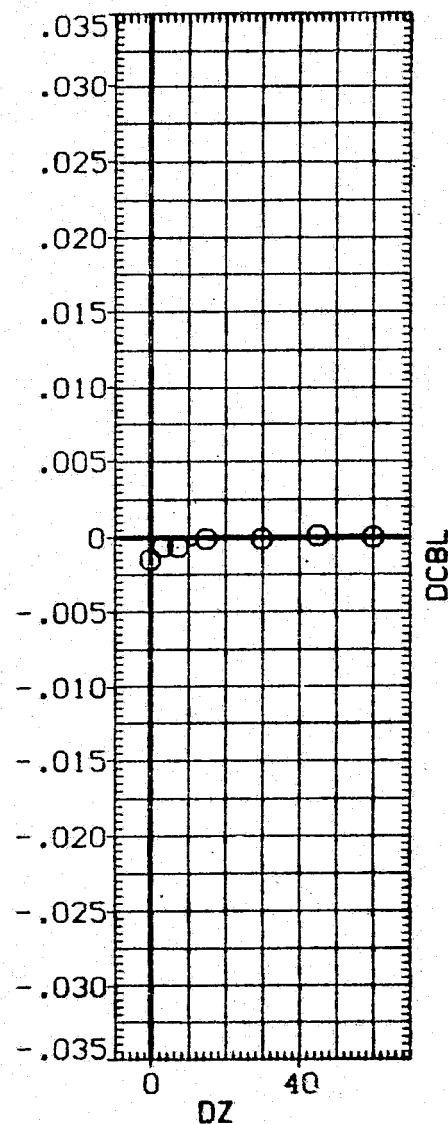
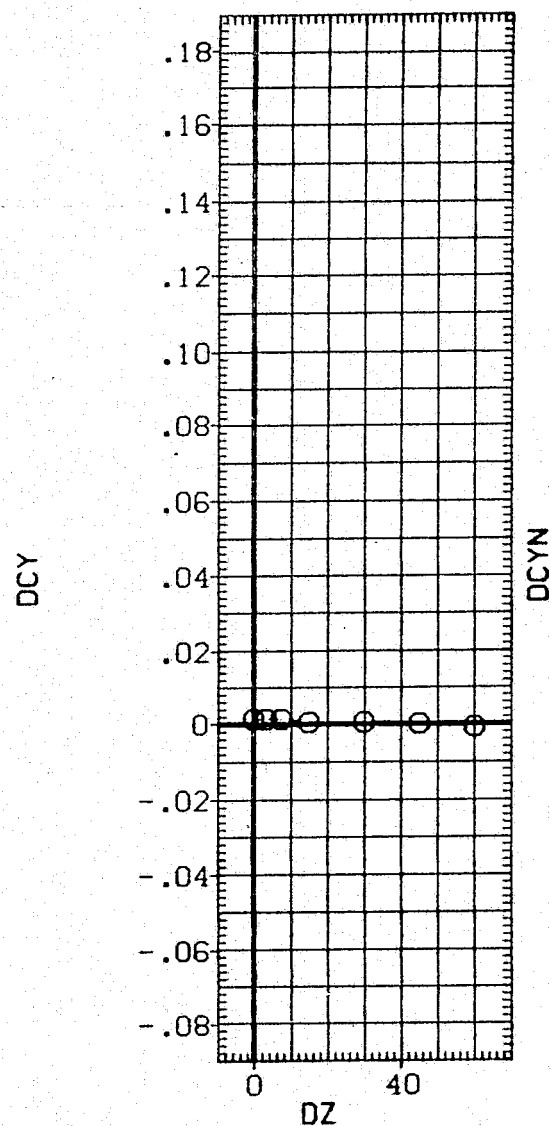


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(C)ALPHA= 10.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (WGNRCA) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA BETAC .000 BETA0 .000 DX .000 DY .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.9000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

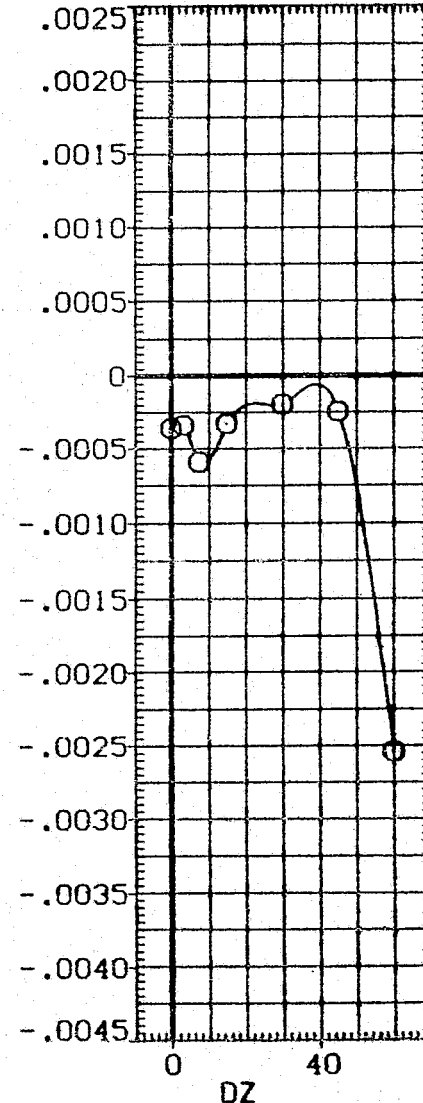
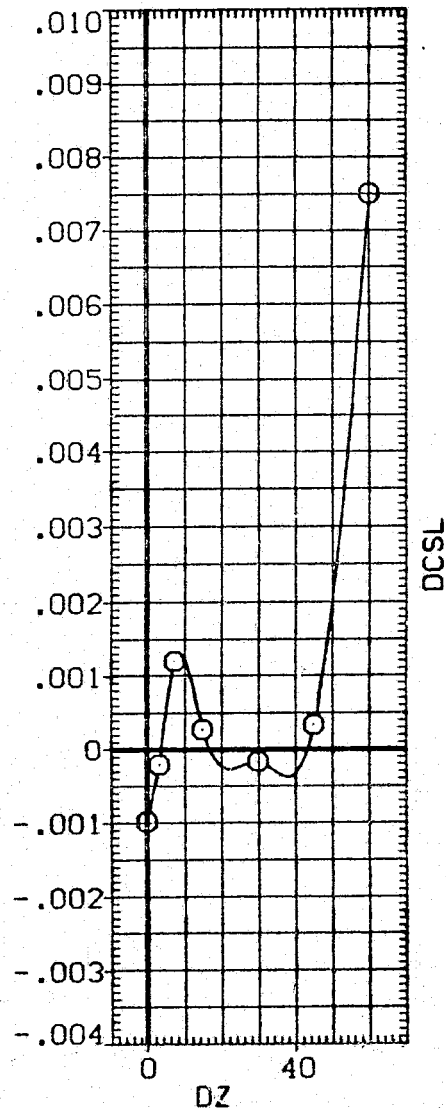
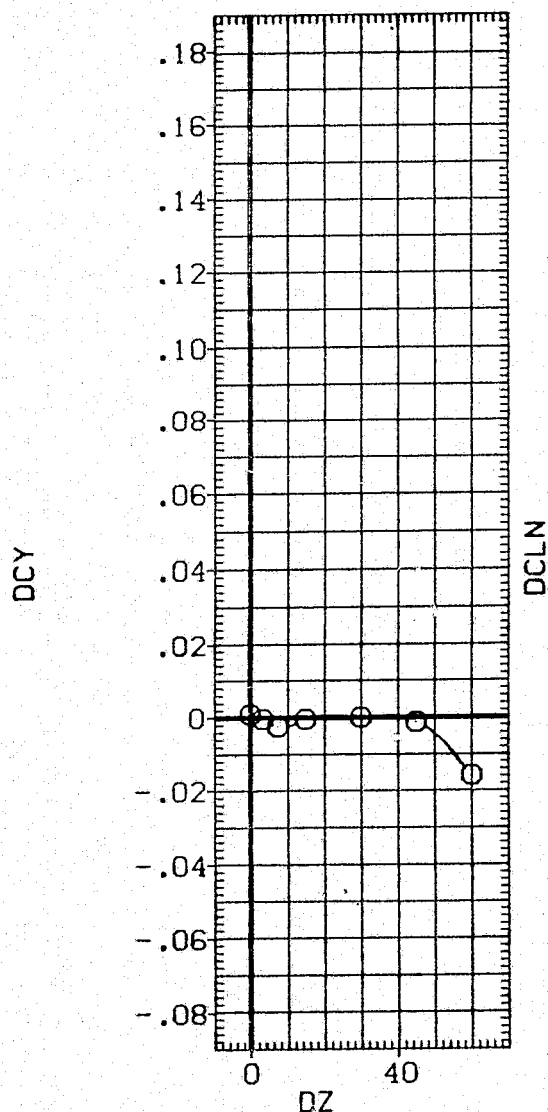


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (A) ALPHA = 2.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) O CA20 747/1 01 S1 AT38 AT39

CARRIER DATA BETAC .000 BETA0 .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9200 IN.XC
YMRP .0000 IN.YC
ZMRP 190.0000 IN.ZC
SCALE .0300

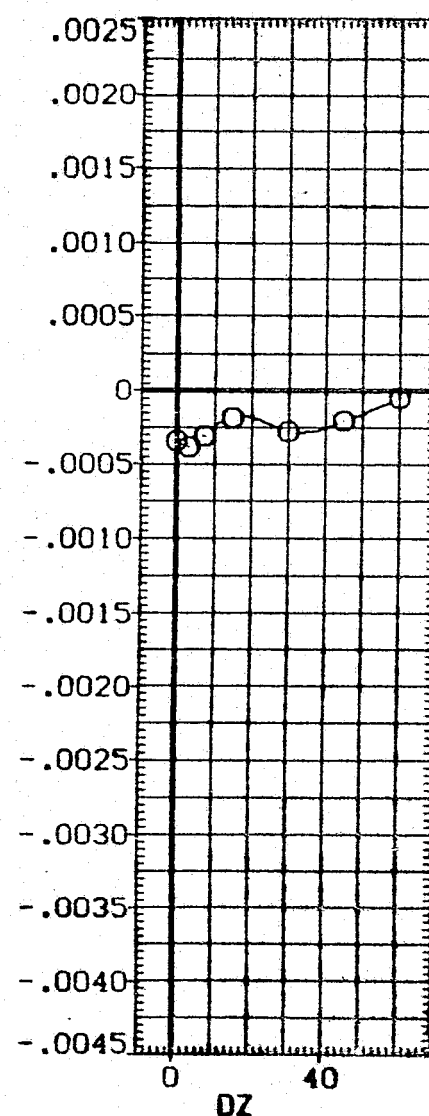
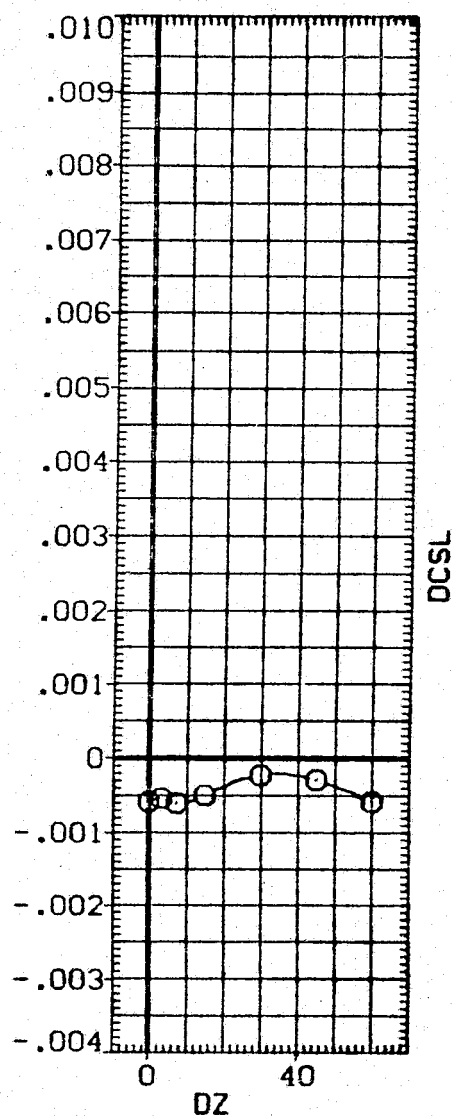
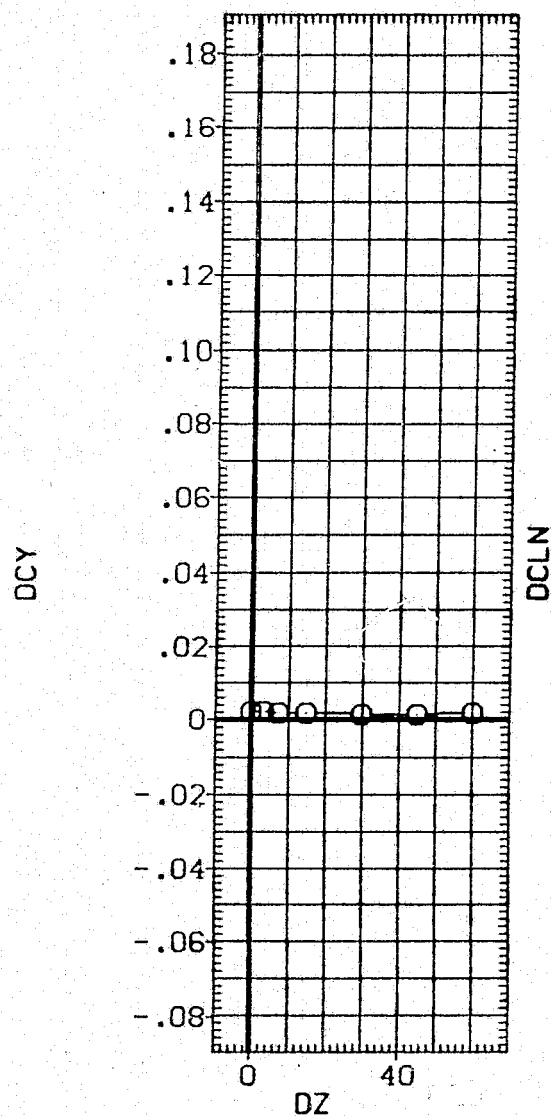


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(B)ALPHA= 6.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRCA) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA BETAC BETAO OX OY
 .000 .000 .000 .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

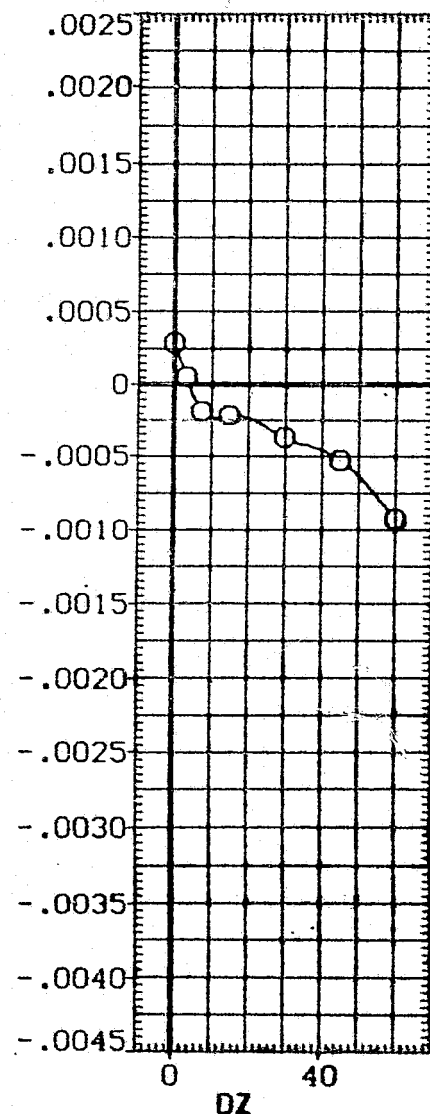
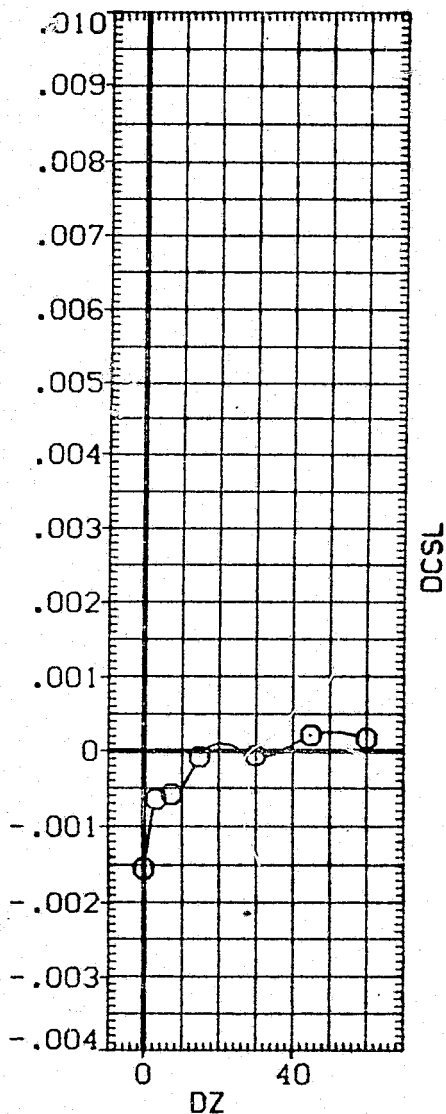
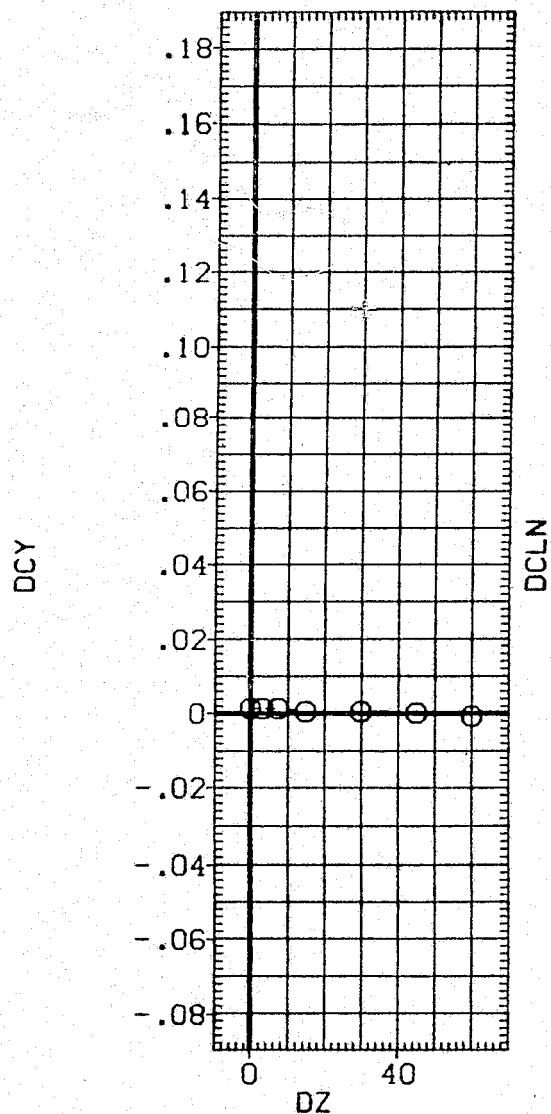


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(C)ALPHA= 10.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRDB) O CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

IORB ELEVON DX DY
8.000 5.000 .000 .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7200 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

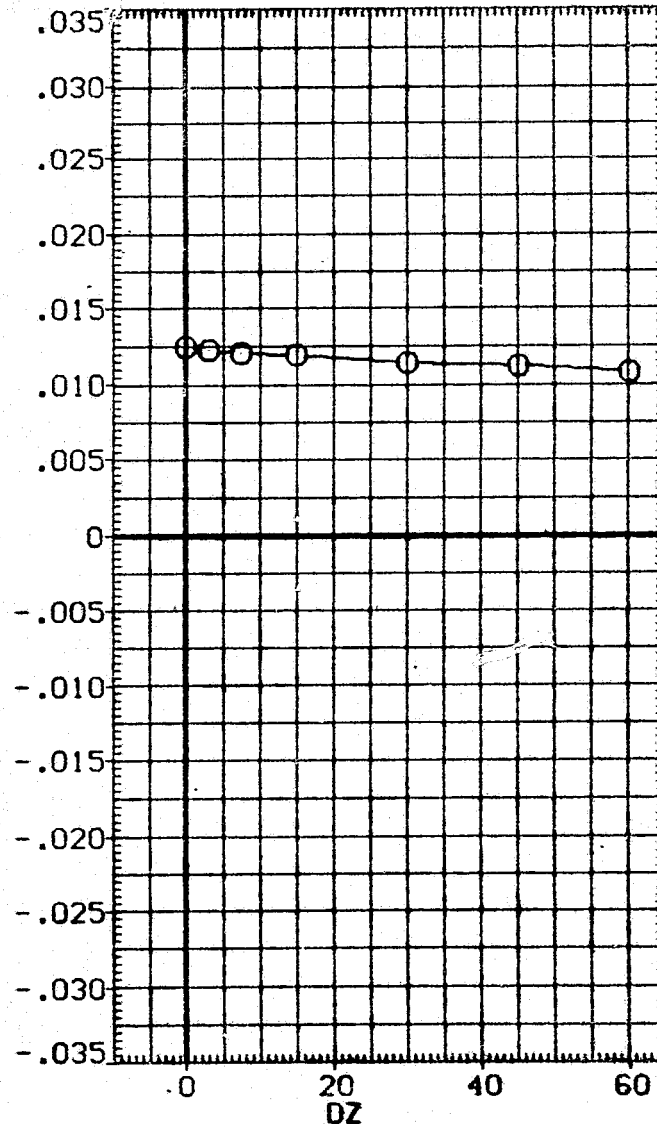
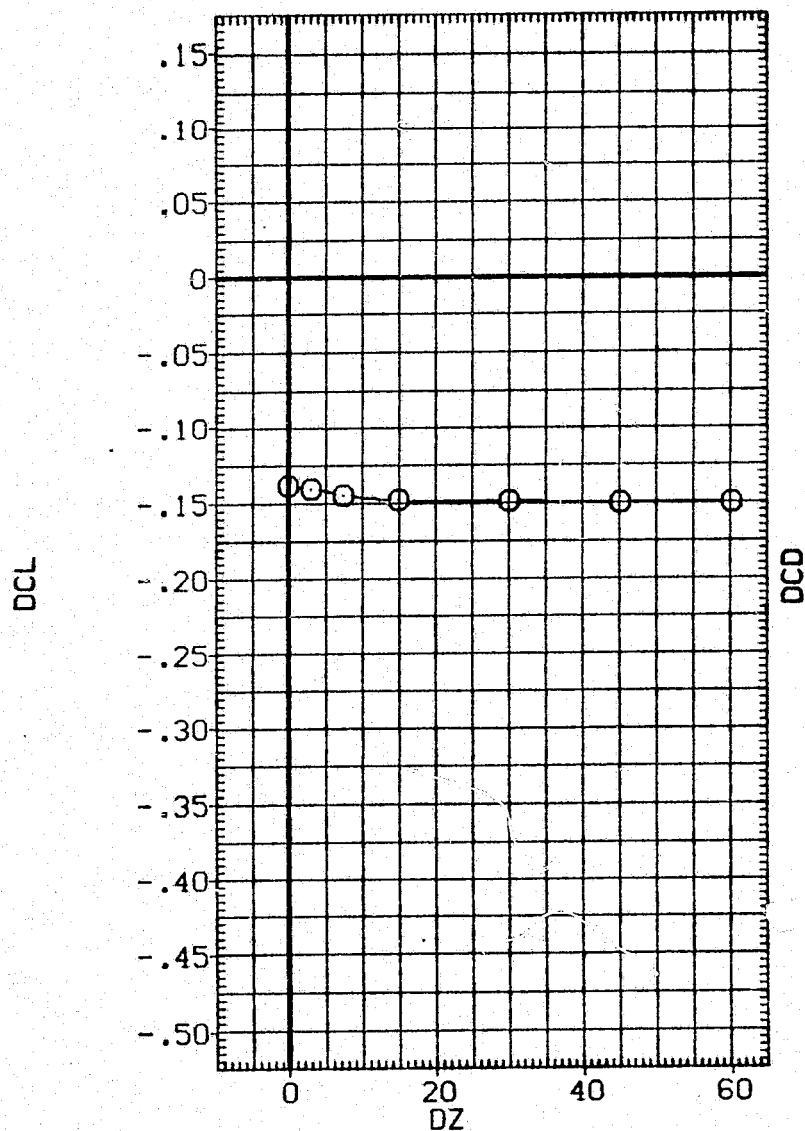


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(A) BETA = -5.00

DATA SET SYMBOL (WGNRDB) ○ CONFIGURATION DESCRIPTION CA20 747/1 01 SI AT38 AT39

CARRIER DATA

IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.5000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

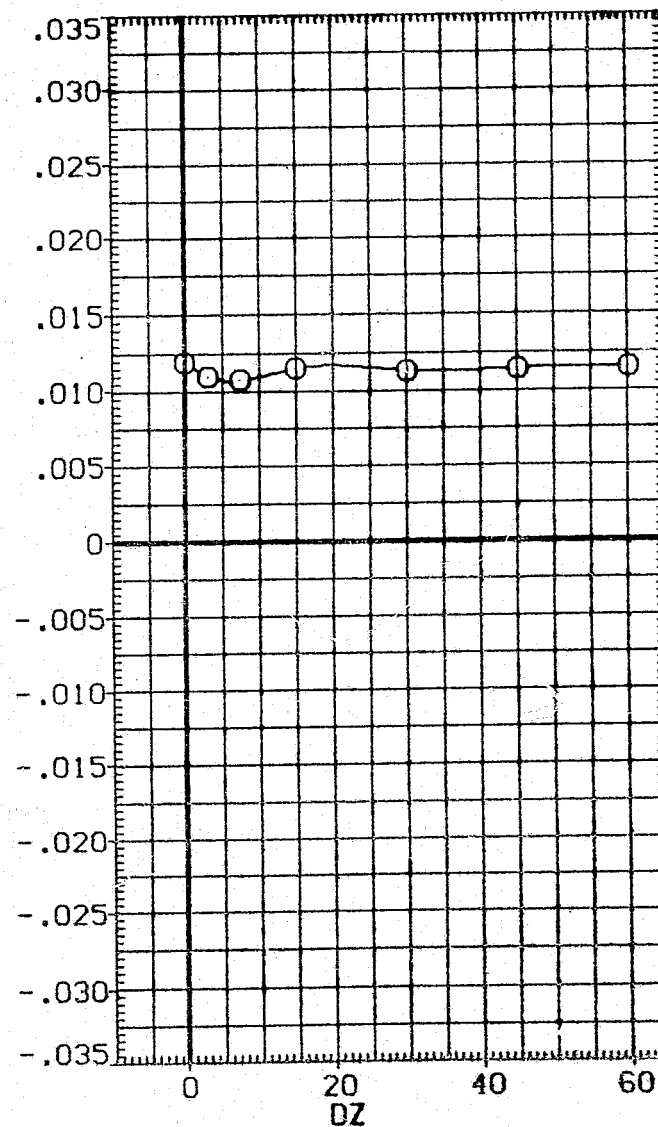
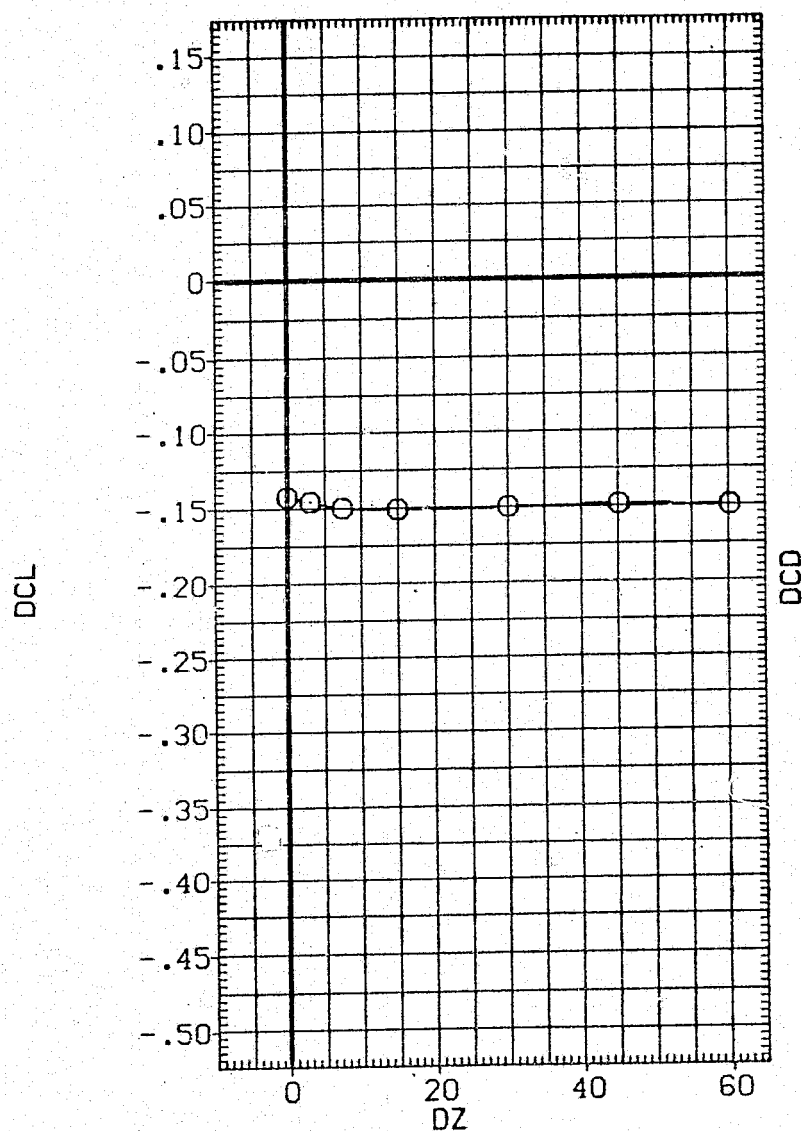


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(B) BETA = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (WGNRDB) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

IORB ELEVON DX DY
 8.000 5.000 .000 .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1333.0000 IN.XC
 YMRP .000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

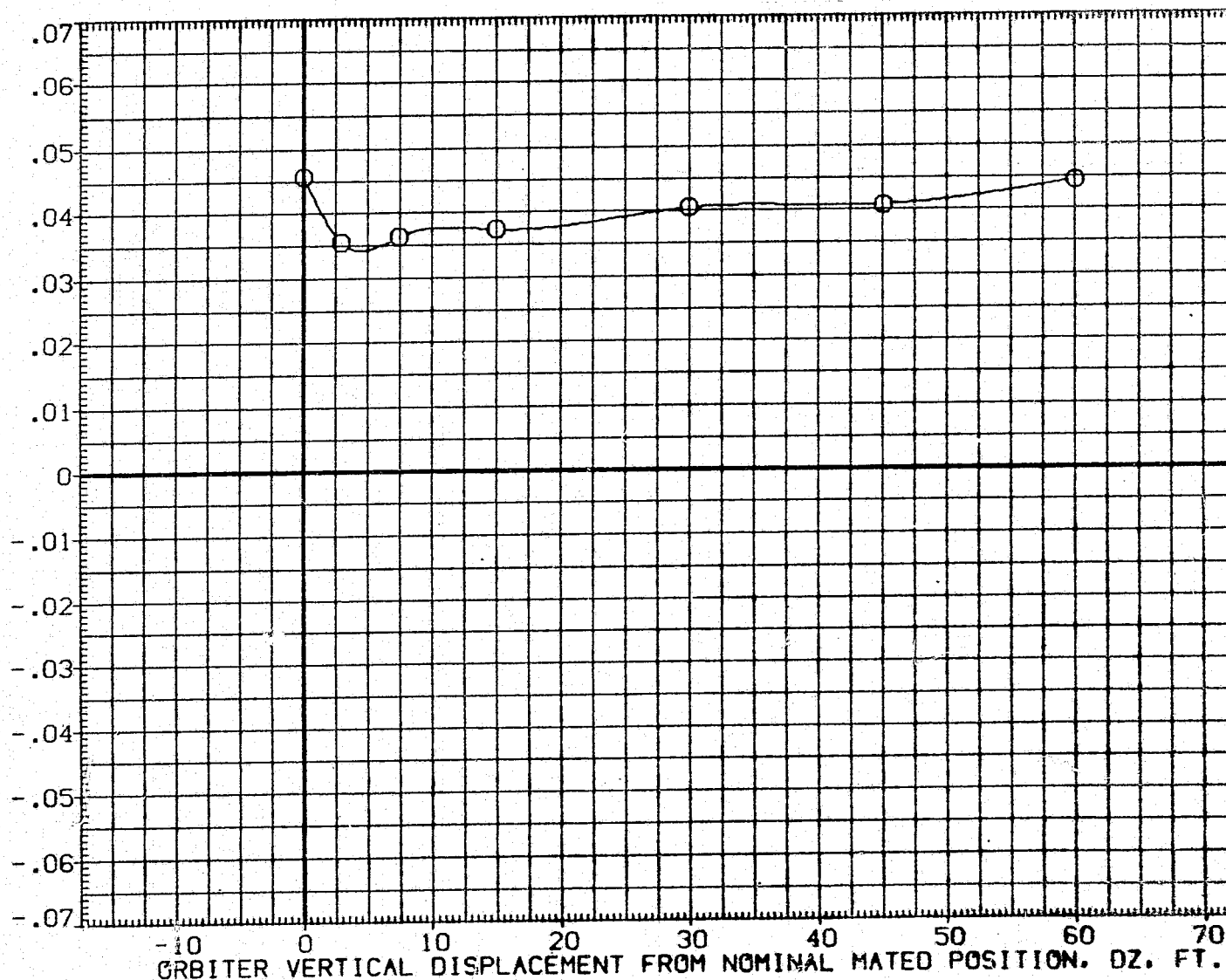


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (A) BETA = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (WGNRDB) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.5000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.8000 IN.ZC
 SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

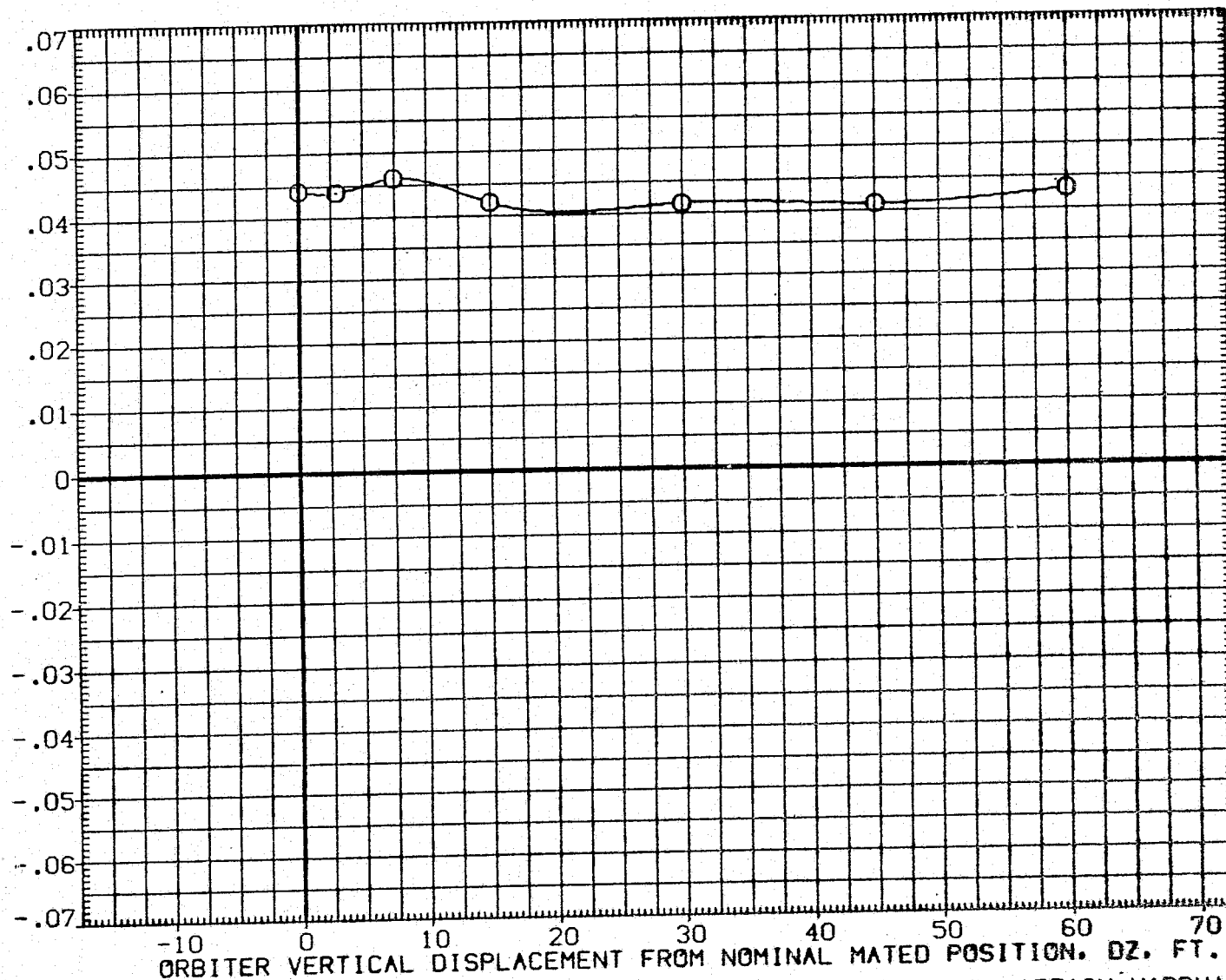


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (B)BETA = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (WGNRDB) O CA20 747/1 01 S1 AT38 AT39 CARRIER DATA

IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.9000 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.6000 IN.ZC
 SCALE .0300

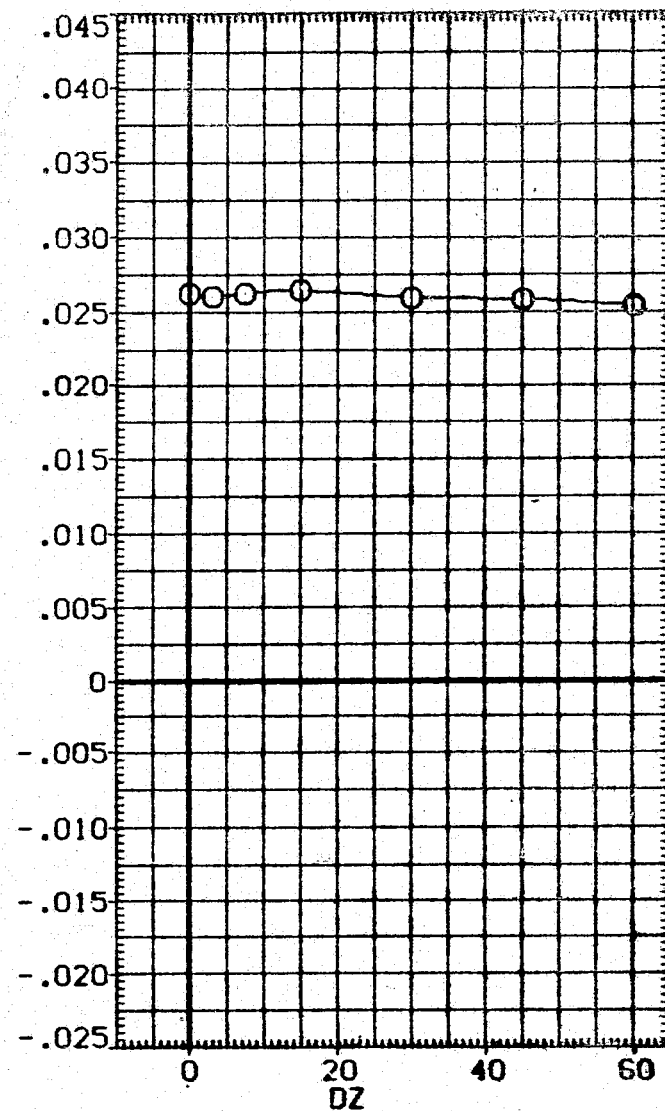
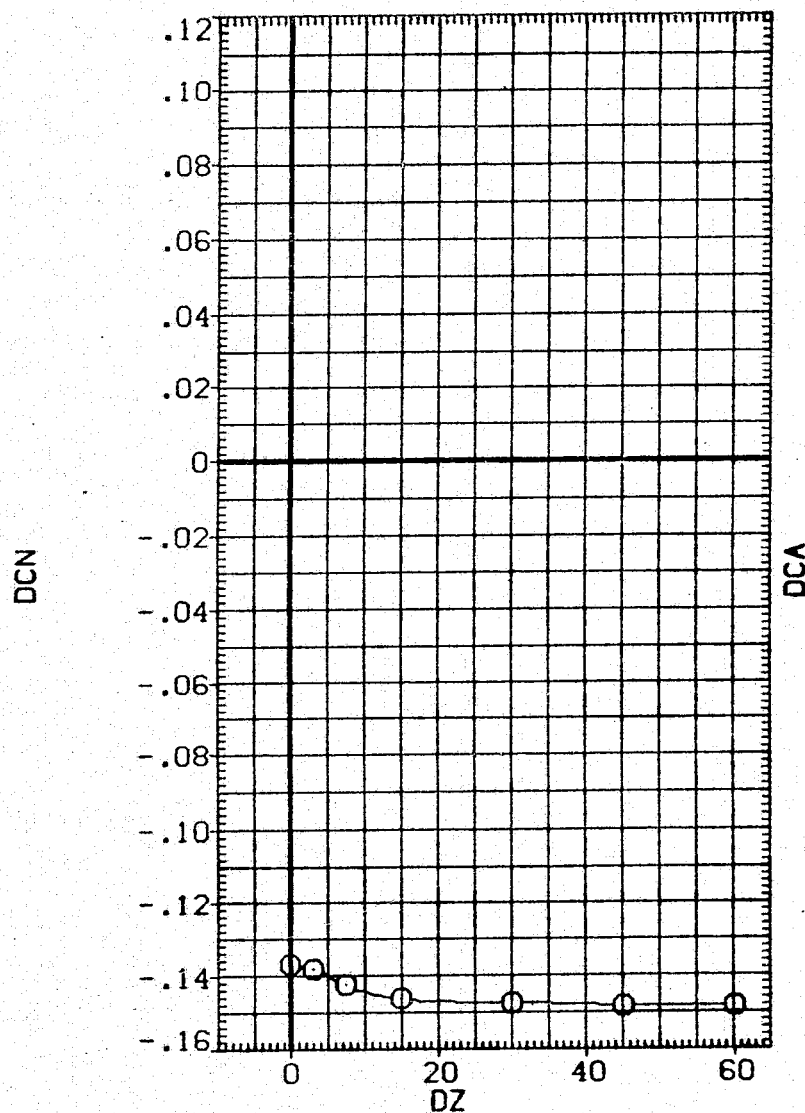


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (A) BETA = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRDB) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA

IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8090 IN.ZC
SCALE .0300

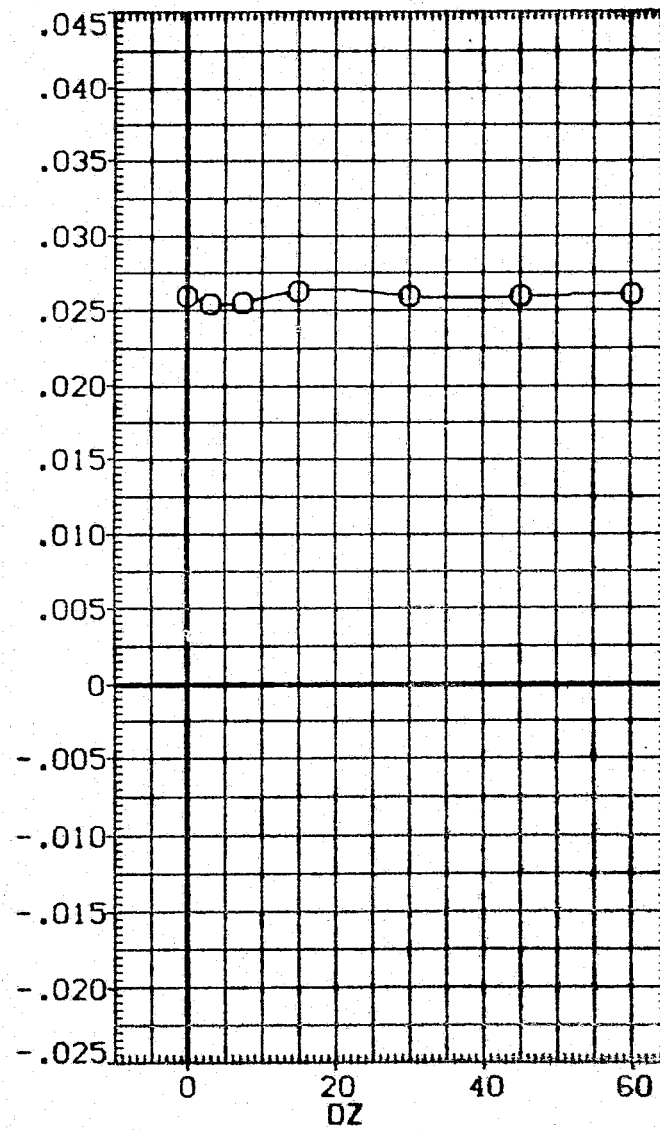
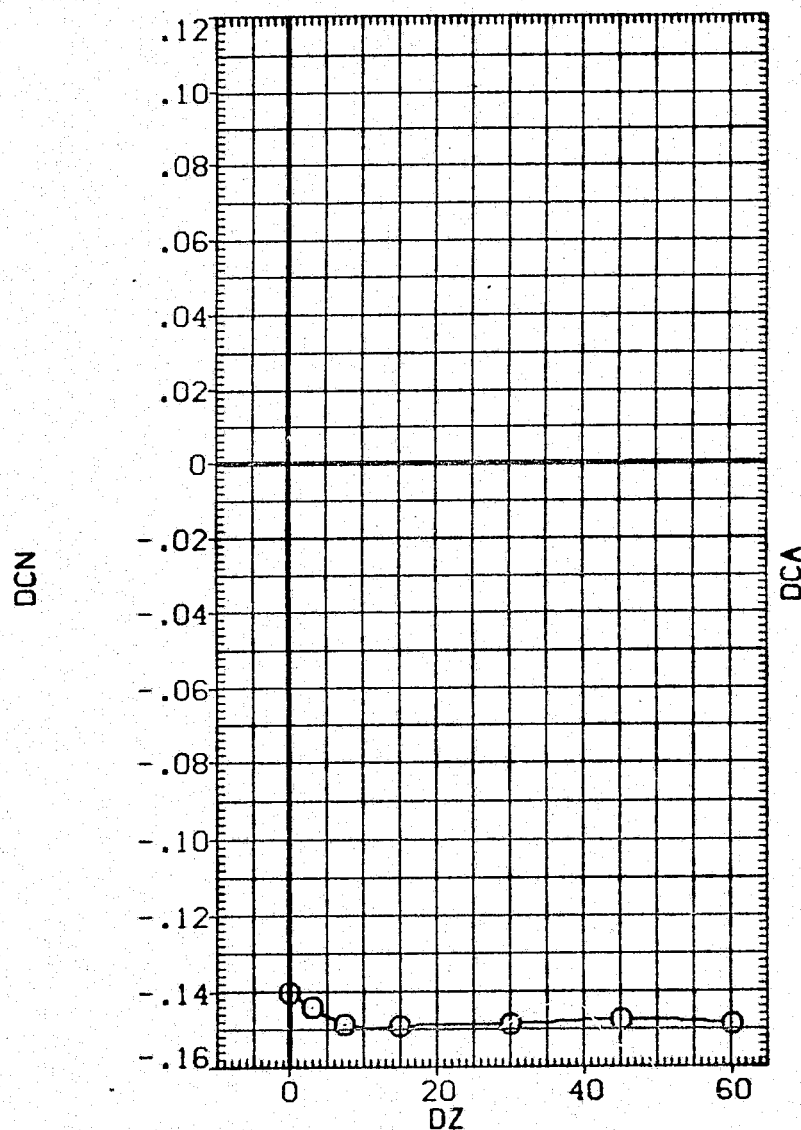


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(B) BETA = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRDB) ○ CA20 747/1 01 S1 AT38 AT39

CARR ER DATA IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5503.0000 50.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0200

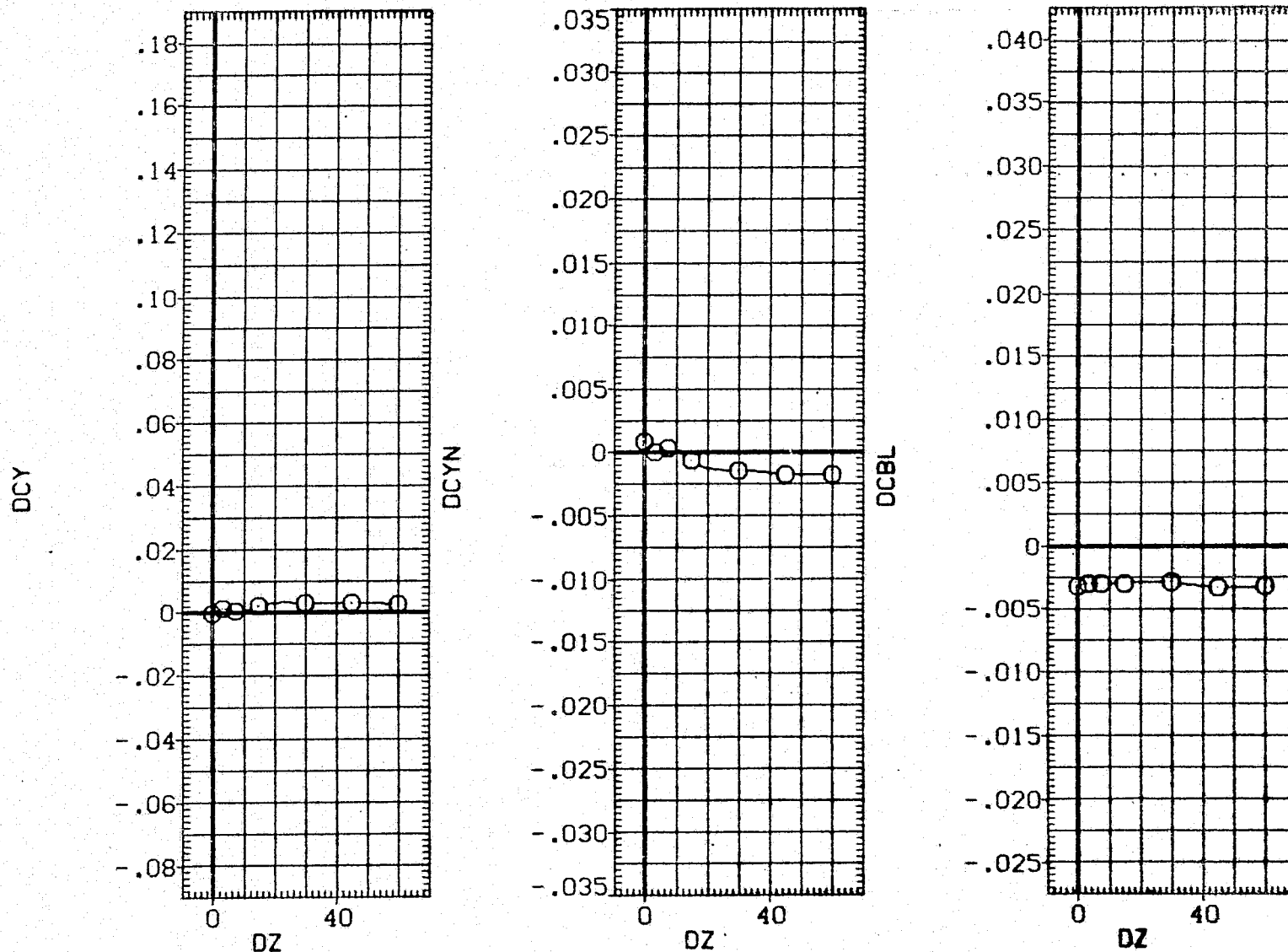


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE

(A) BETA = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRDB) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA IORB ELEVON DX DY
 8.000 5.000 .000 .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

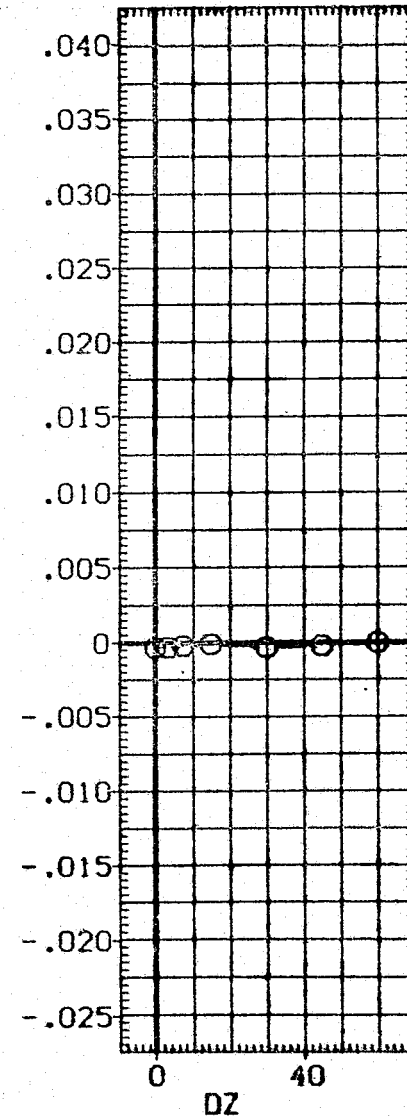
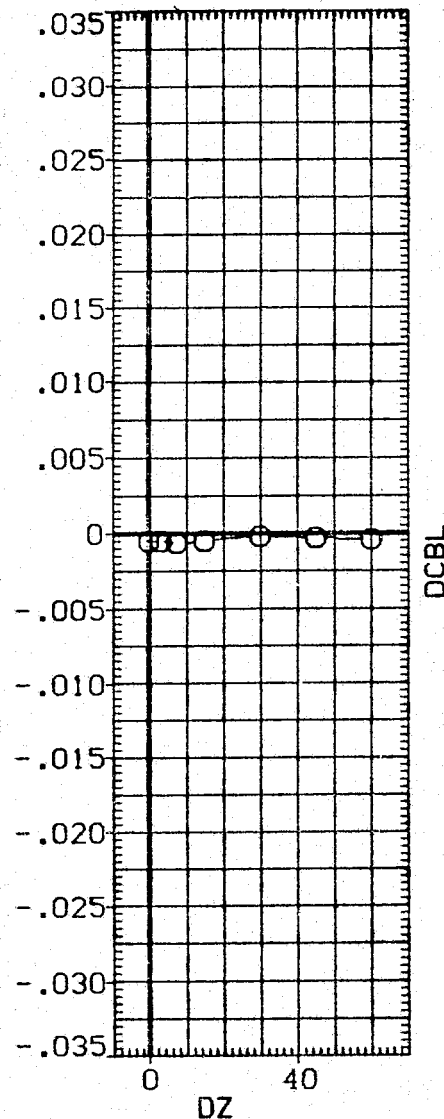
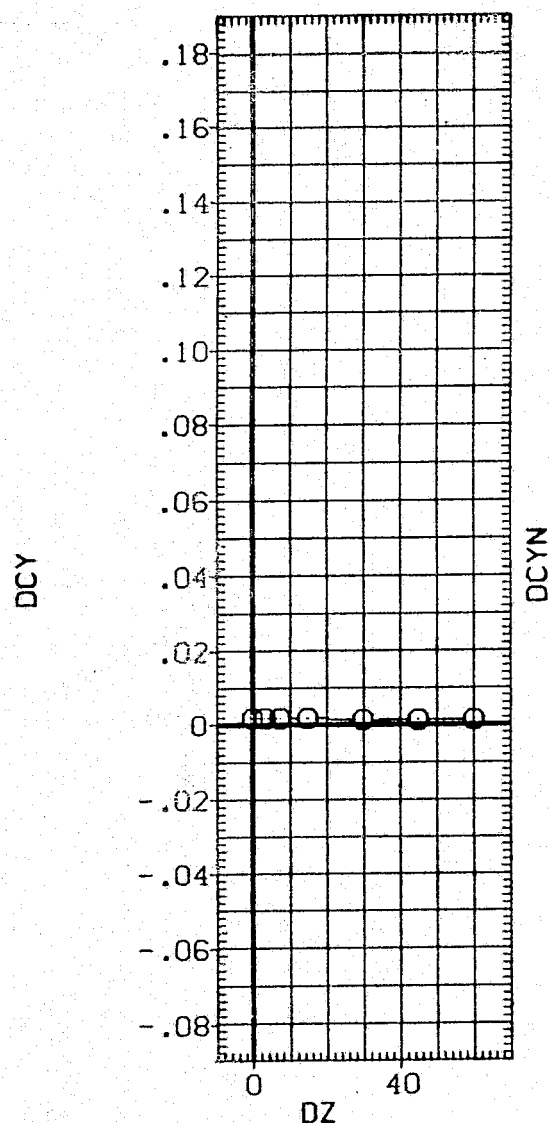


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(B)BETA = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (VGNRDB) ○ CA20 747/1 01 S1 AT38 AT39

CARRIER DATA IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
 SREF 5500.0000 SQ.FT.
 LREF 327.7800 IN.
 BREF 2348.0400 IN.
 XMRP 1339.3500 IN.XC
 YMRP .0000 IN.YC
 ZMRP 190.0000 IN.ZC
 SCALE .0300

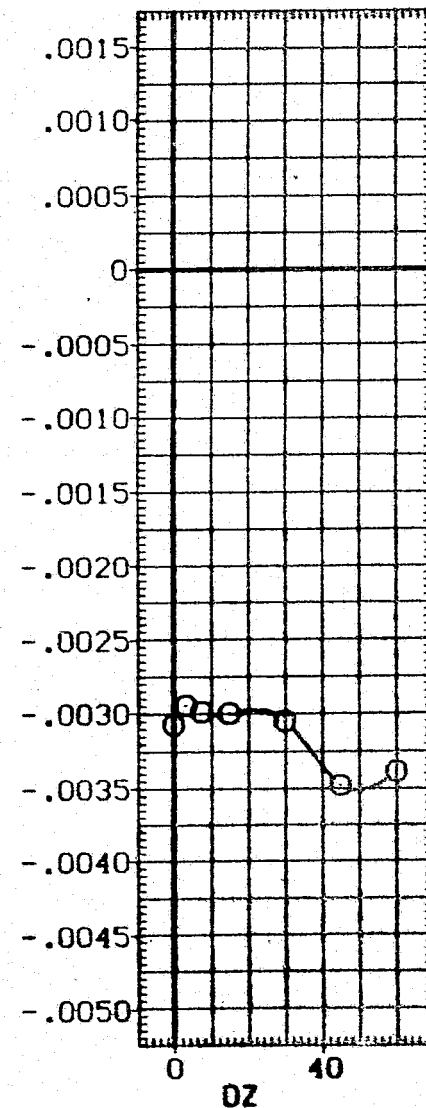
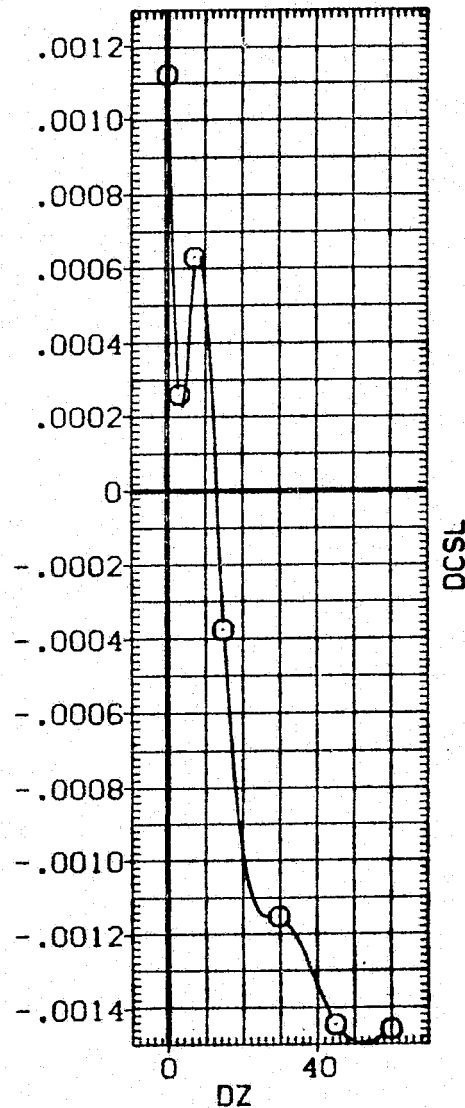
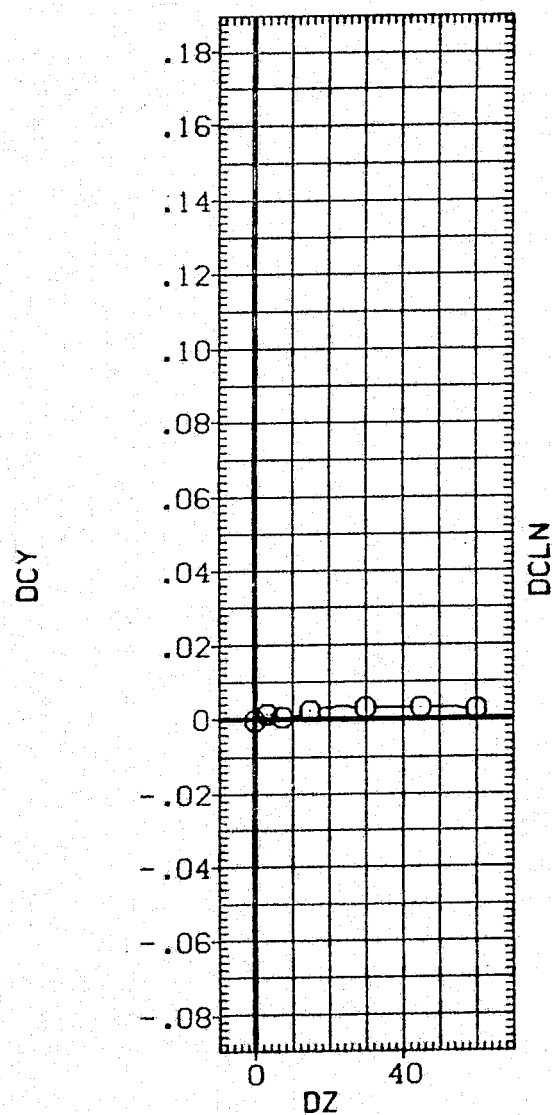


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
 (A) BETA = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(WGNRDB) ○ CA20 747/1 01 SI AT38 AT39

CARRIER DATA IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

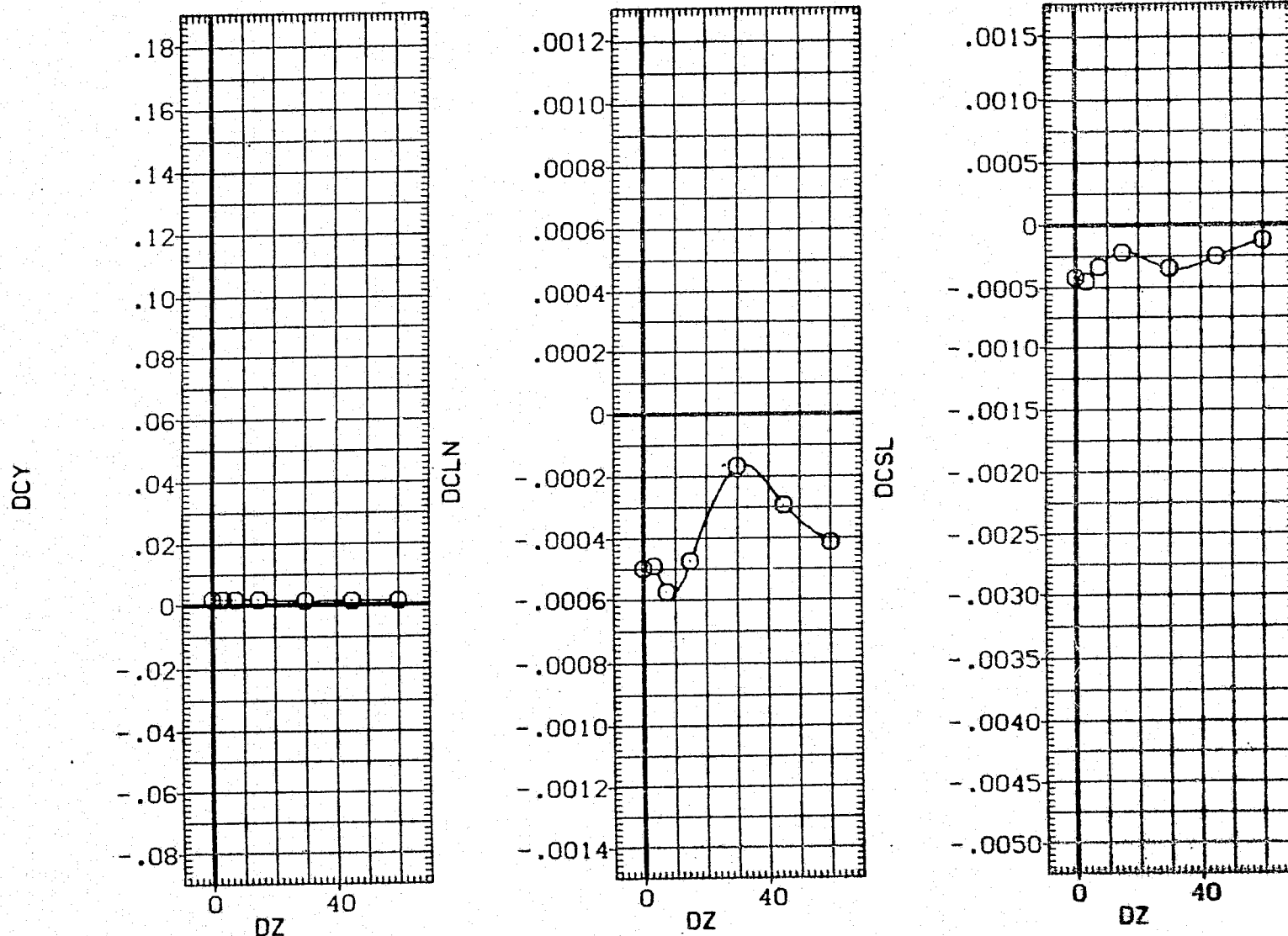


FIG 20C SPOILER EFFECTS ON CARRIER IN PRESENCE OF ORBITER WITH ATTACH HARDWARE
(B) BETA = .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOF1)	CA20 747/1 01 S1 AT38 AT39
(SGNOJ1)	CA20 747/1 01 S1
(SGNOL1)	DATA NOT AVAILABLE
(SGNON1)	DATA NOT AVAILABLE

ORBITER DATA
ORBITER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION	
.000	.000	.000	.000	SREF	2690.0000 SQ.FT.
.000	.000	.000	.000	LREF	474.8100 IN.
.000	.000	.000	.000	BREF	936.6800 IN.
.000	.000	.000	.000	XMRP	1109.0000 IN.X0
				YMRP	.0000 IN.Y0
				ZMRP	375.0000 IN.Z0
				SCALE	.0300

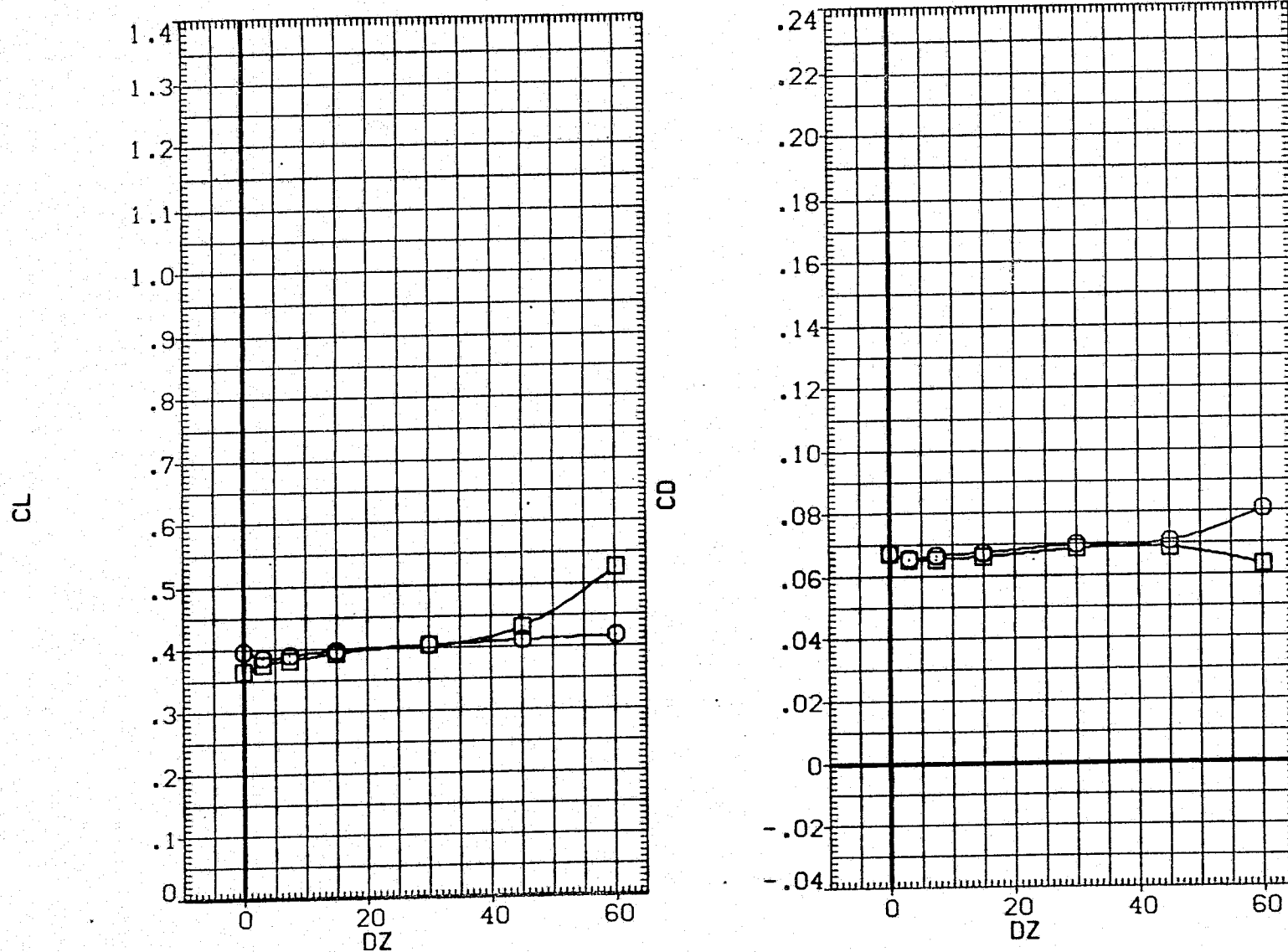


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER
(A) ALPHA0 = 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOF1) CA20 747/1 01 S1 AT38 AT39
 (SGNOJ1) DATA NOT AVAILABLE
 (SGNOL1) CA20 747/1 01 S1
 (SGNON1) DATA NOT AVAILABLE

ORBITER DATA
 ORBITER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	2690.0000	SQ.FT.
.000	.000	.000	.000	LREF	474.8100	IN.
.000	.000	.000	.000	BREF	936.6800	IN.
.000	.000	.000	.000	XMRP	1109.0000	IN.X0
				YMRP	.0000	IN.Y0
				ZMRP	375.0000	IN.Z0
				SCALE	.0300	

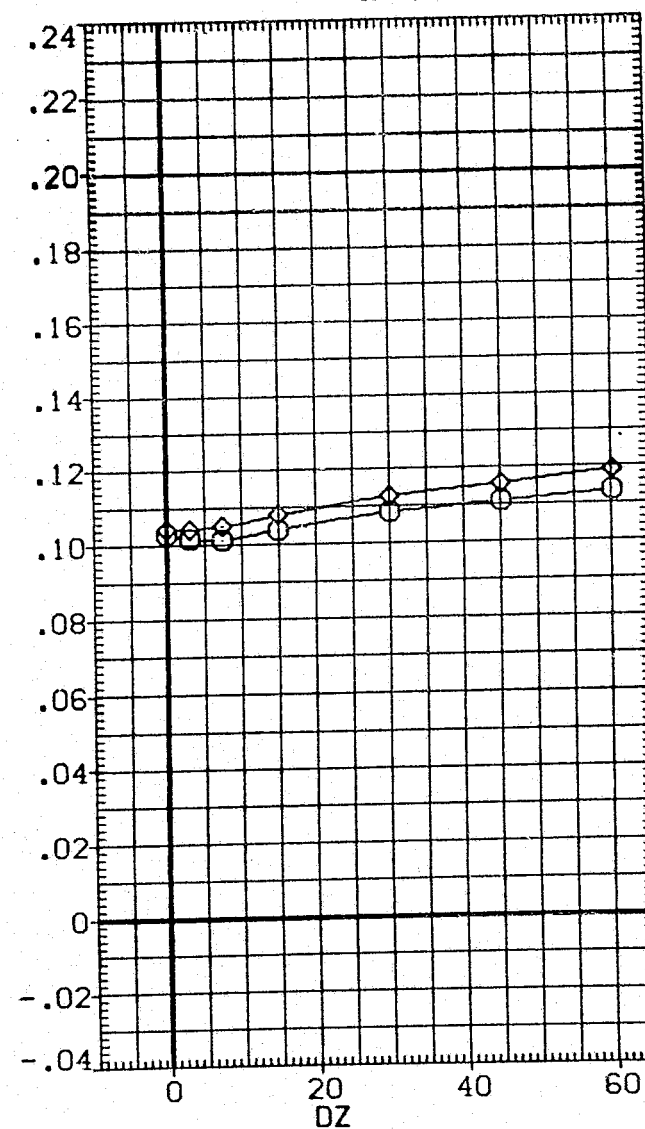
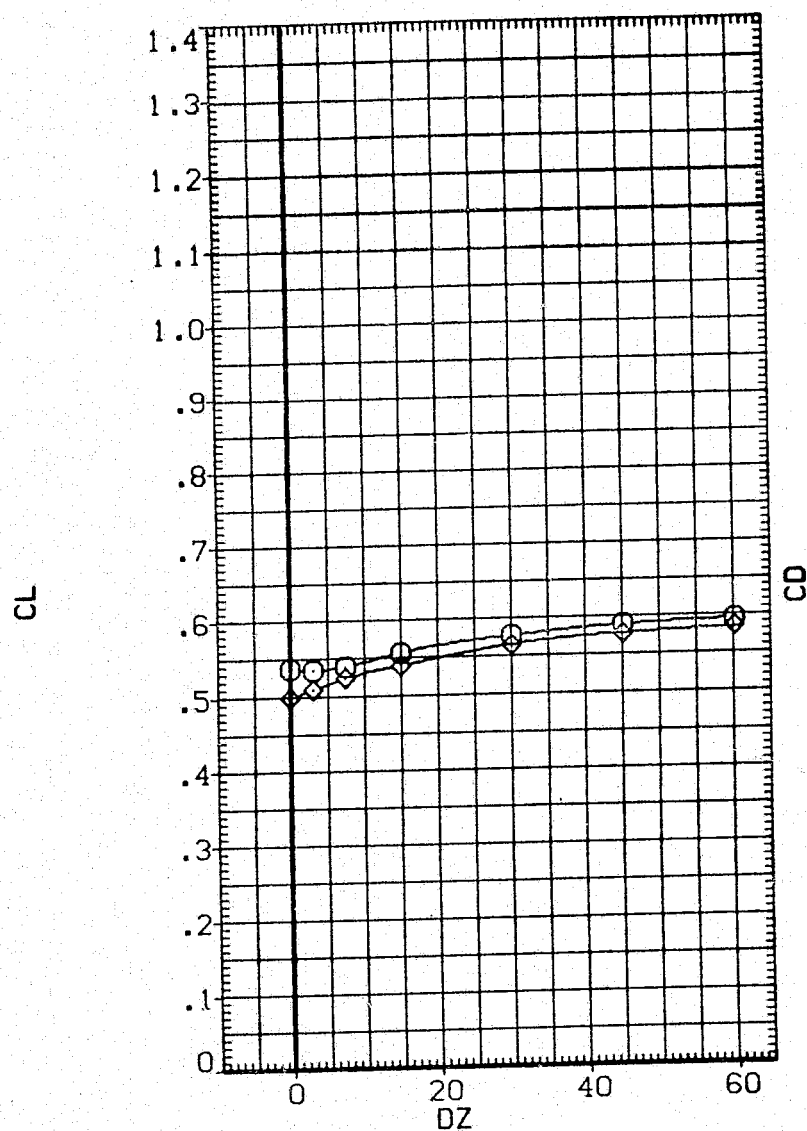


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER
 (B) ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOF1) CA20 747/1 01 S1 AT3B AT39
 (SGNOJ1) DATA NOT AVAILABLE
 (SGNOL1) DATA NOT AVAILABLE
 (SGNON1) CA20 747/1 01 S1

ORBITER DATA
 ORBITER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	2690.0000	SQ.FT.
.000	.000	.000	.000	LREF	474.8100	IN.
.000	.000	.000	.000	BREF	936.6800	IN.
.000	.000	.000	.000	XMRP	1109.0000	IN.X0
				YMRP	.0000	IN.Y0
				ZMRP	375.0000	IN.Z0
				SCALE	.0300	

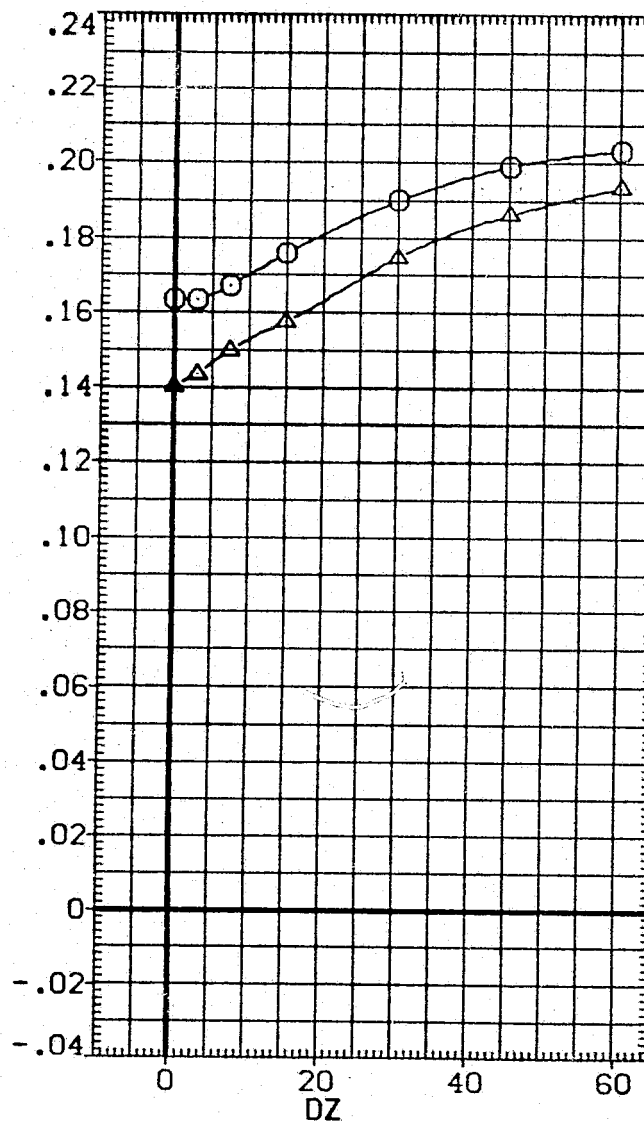
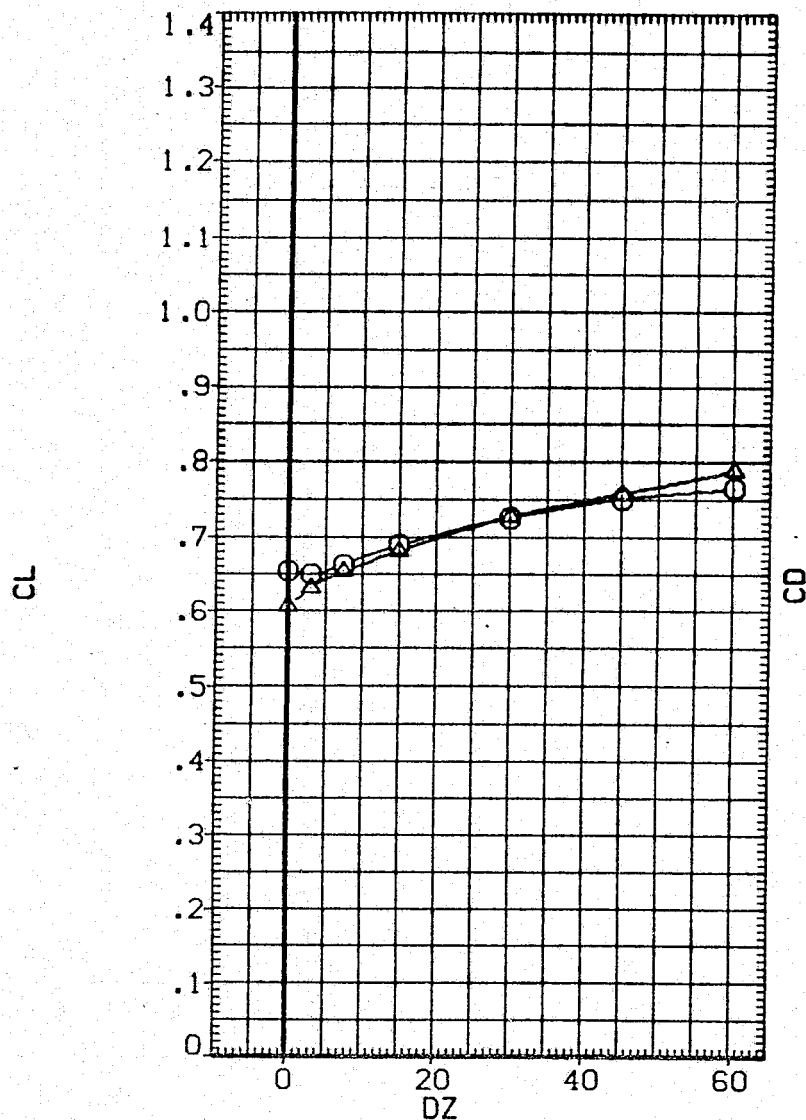


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER

(C) ALPHA0= 16.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOF1) □	C420 747/1 01 S1 AT38 AT39
(SGNOJ1) □	CA20 747/1 01 S1
(SGNOL1) X	DATA NOT AVAILABLE
(SGNON1) X	DATA NOT AVAILABLE

ORBITER DATA
ORBITER DATA

BETAC	BETA0	DX	DY
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

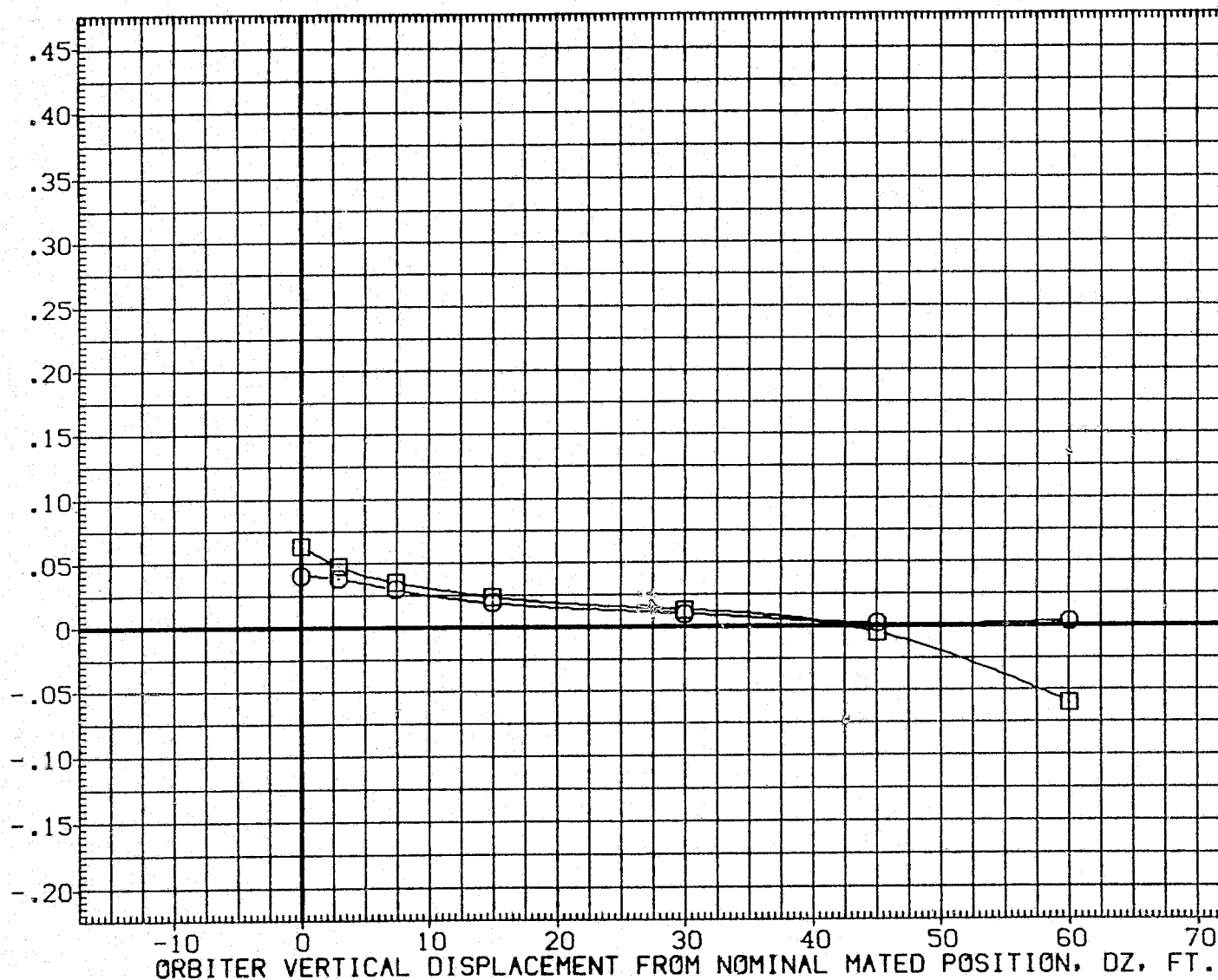


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER

(A)ALPHA0= 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER DATA	BETAC	BETA0	DX	DY	REFERENCE INFORMATION
(SGNOF1)	CA20 747/1 01 S1 AT38 AT39	ORBITER DATA	.000	.000	.000	.000	SREF 2690.0000 SQ.FT.
(SGNOJ1)	DATA NOT AVAILABLE	ORBITER DATA	.000	.000	.000	.000	LREF 474.8100 IN.
(SGNOL1)	CA20 747/1 01 S1	ORBITER DATA	.000	.000	.000	.000	BREF 936.6800 IN.
(SGNON1)	DATA NOT AVAILABLE		.000	.000	.000	.000	XMRP 1109.0000 IN.X0
							YMRP .0000 IN.Y0
							ZMRP 375.0000 IN.Z0
							SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

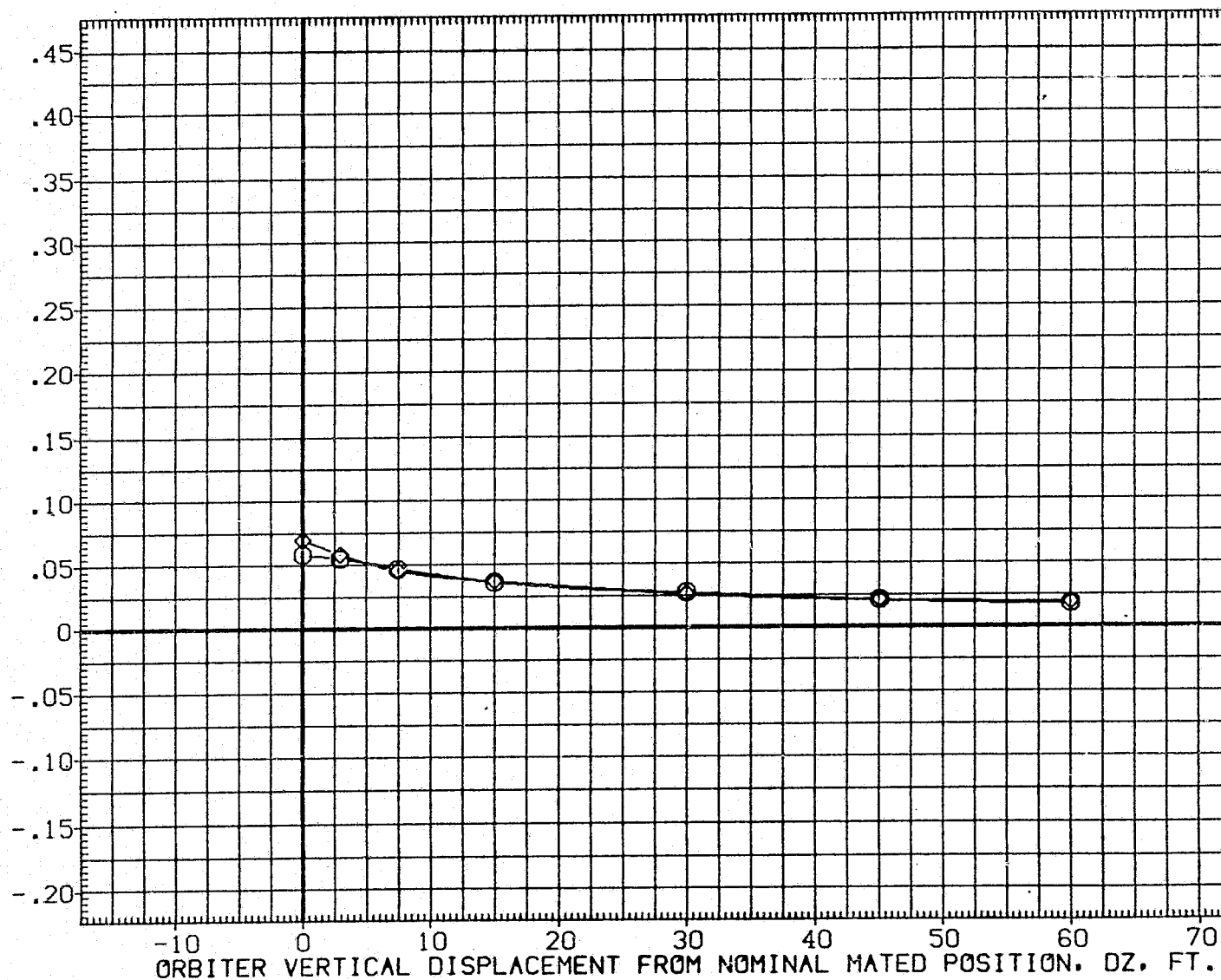


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER

(B) ALPHA0= 12.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	BETA0	DX	DY	REFERENCE INFORMATION
(SGNOF1)	CA20 747/1 01 S1 AT38 AT39	.000	.000	.000	.000	SREF 2690.0000 SQ.FT.
(SGNOJ1)	DATA NOT AVAILABLE	.000	.000	.000	.000	LREF 474.8100 IN.
(SGNOL1)	DATA NOT AVAILABLE	.000	.000	.000	.000	BREF 936.6800 IN.
(SGNON1)	CA20 747/1 01 S1	.000	.000	.000	.000	XMRP 1109.0000 IN.X0
						YMRP .0000 IN.Y0
						ZMRP 375.0000 IN.Z0
						SCALE .0300

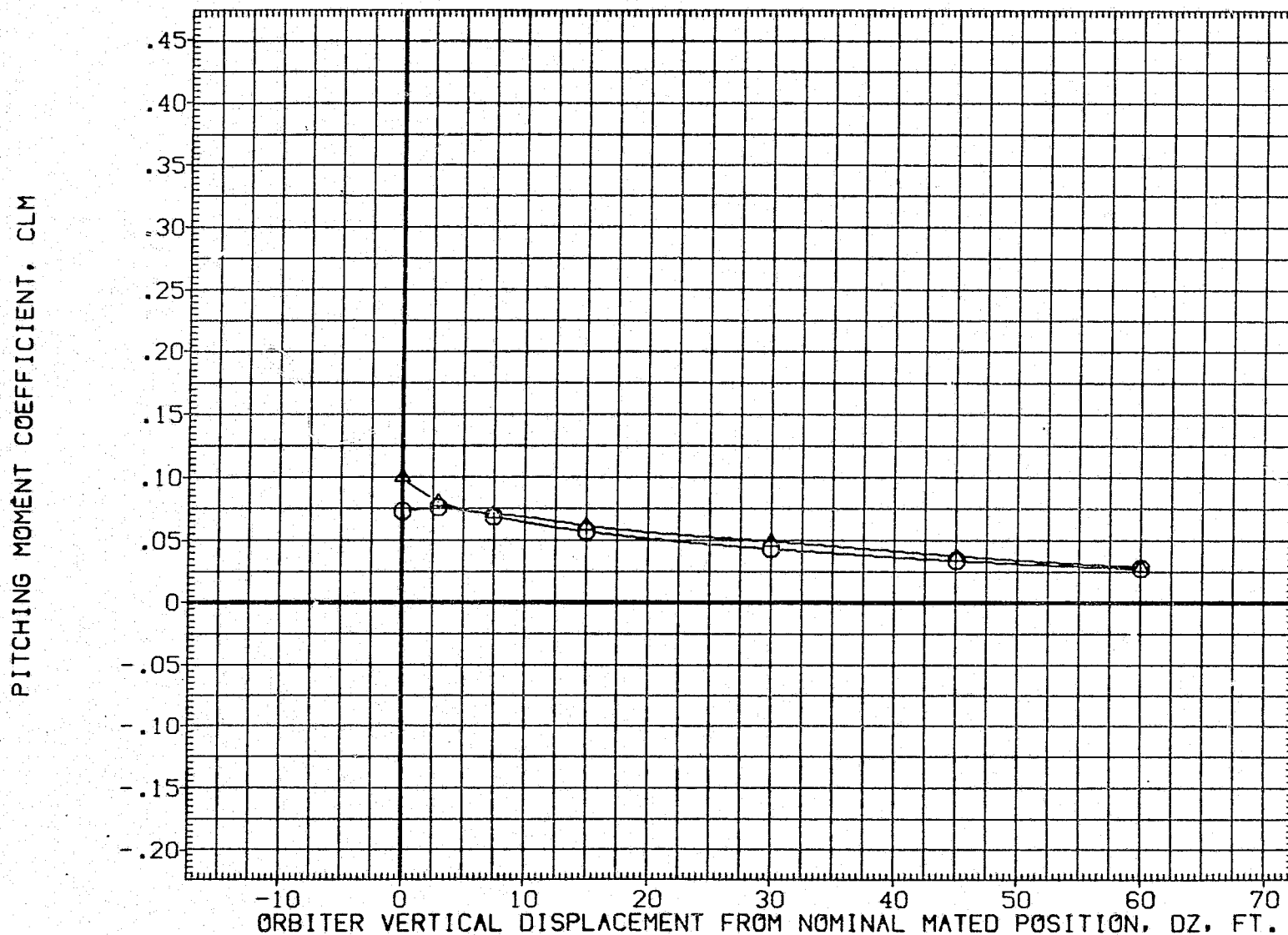


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER

(C)ALPHA0= 16.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOF1)	CA20 747/1 01 S1 AT38 AT39
(SGNOJ1)	CA20 747/1 01 S1
(SGNOL1)	DATA NOT AVAILABLE
(SGNON1)	DATA NOT AVAILABLE

ORBITER DATA
ORBITER DATA

BETAC	BETAG	DX	DY	REFERENCE INFORMATION	
.000	.000	.000	.000	SREF	2690.0000 SQ.FT.
.000	.000	.000	.000	LREF	474.8100 IN.
.000	.000	.000	.000	BREF	936.6800 IN.
.000	.000	.000	.000	XMRP	1109.0000 IN.X0
				YMRP	.0000 IN.Y0
				ZMRP	375.0000 IN.Z0
				SCALE	.0300

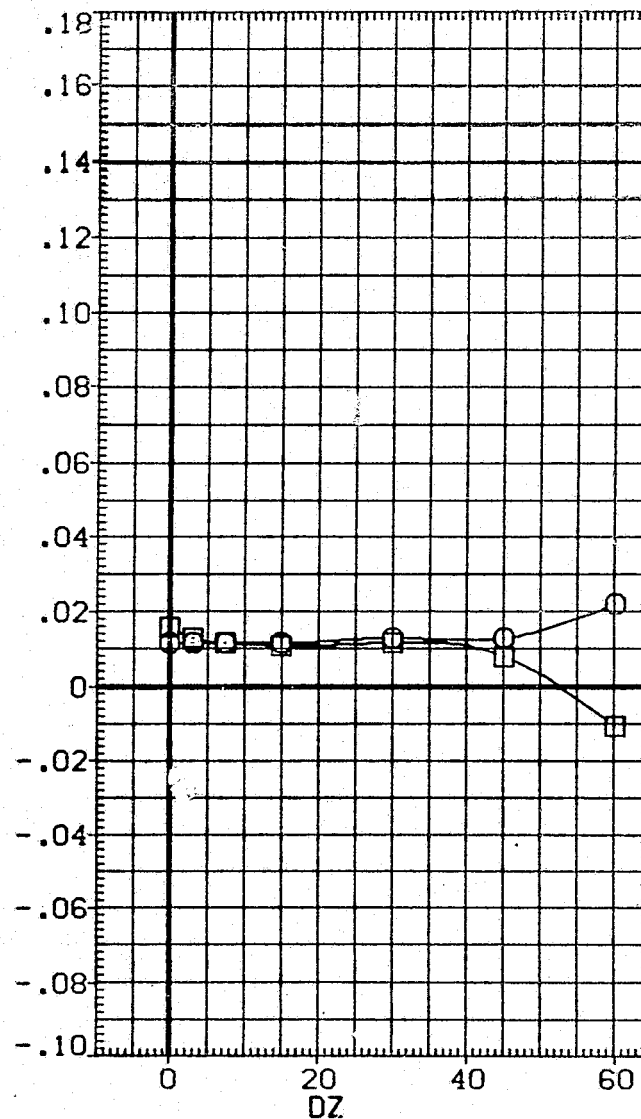
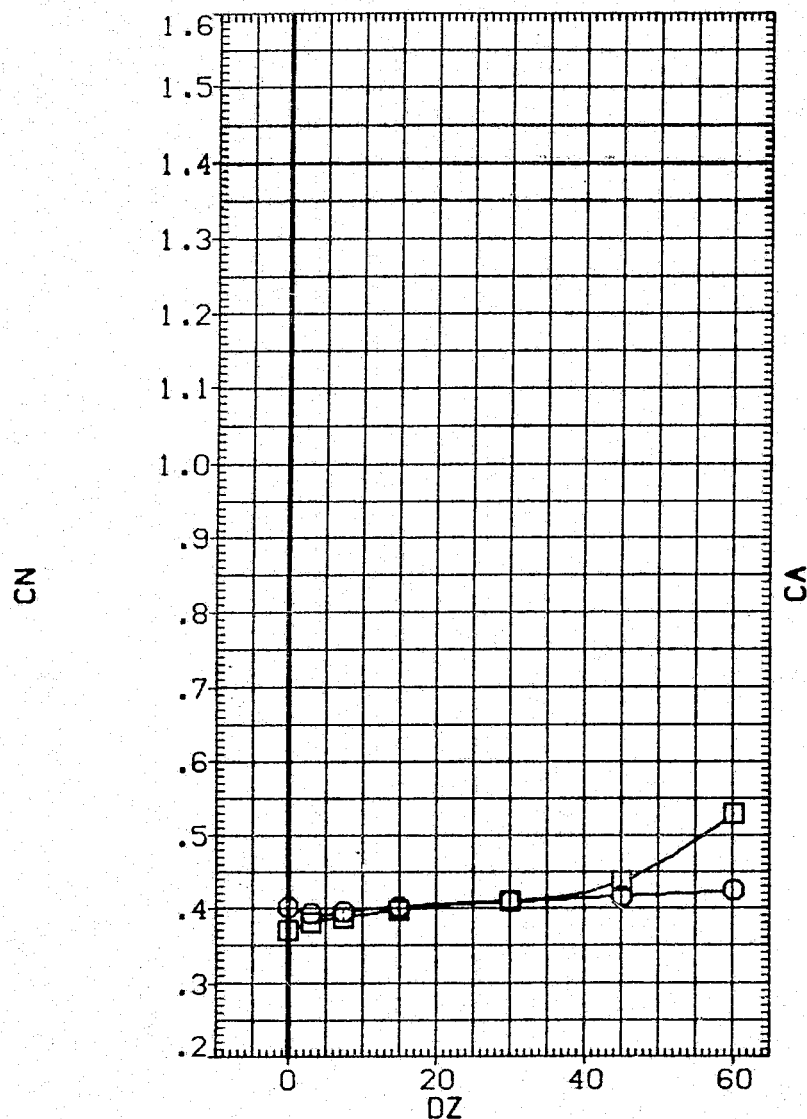


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER
(A) $\alpha_0 = 8.00$

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOF1)	CA20 747/1 01 S1 AT38 AT39
(SGNOJ1)	DATA NOT AVAILABLE
(SGNOL1)	CA20 747/1 01 S1
(SGNON1)	DATA NOT AVAILABLE

ORBITER DATA
ORBITER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION	
.000	.000	.000	.000	SREF	2690.0000 SQ.FT.
.000	.000	.000	.000	LREF	474.8100 IN.
.000	.000	.000	.000	BREF	536.6800 IN.
.000	.000	.000	.000	XMRP	1109.0000 IN.X0
				YMRP	.0000 IN.Y0
				ZMRP	375.0000 IN.Z0
				SCALE	.0300

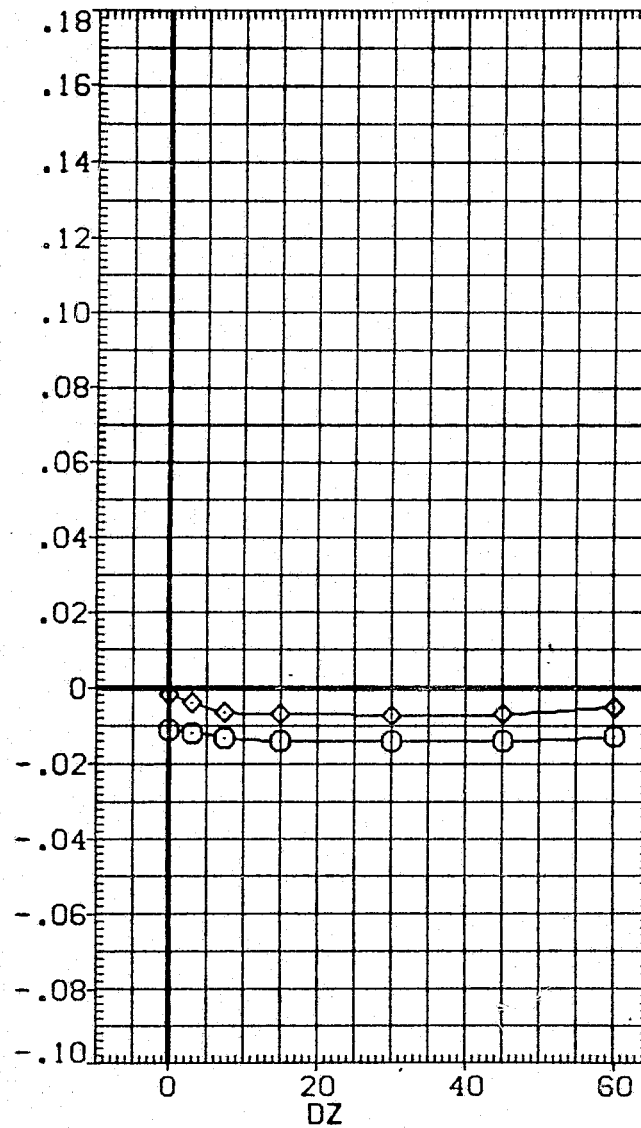
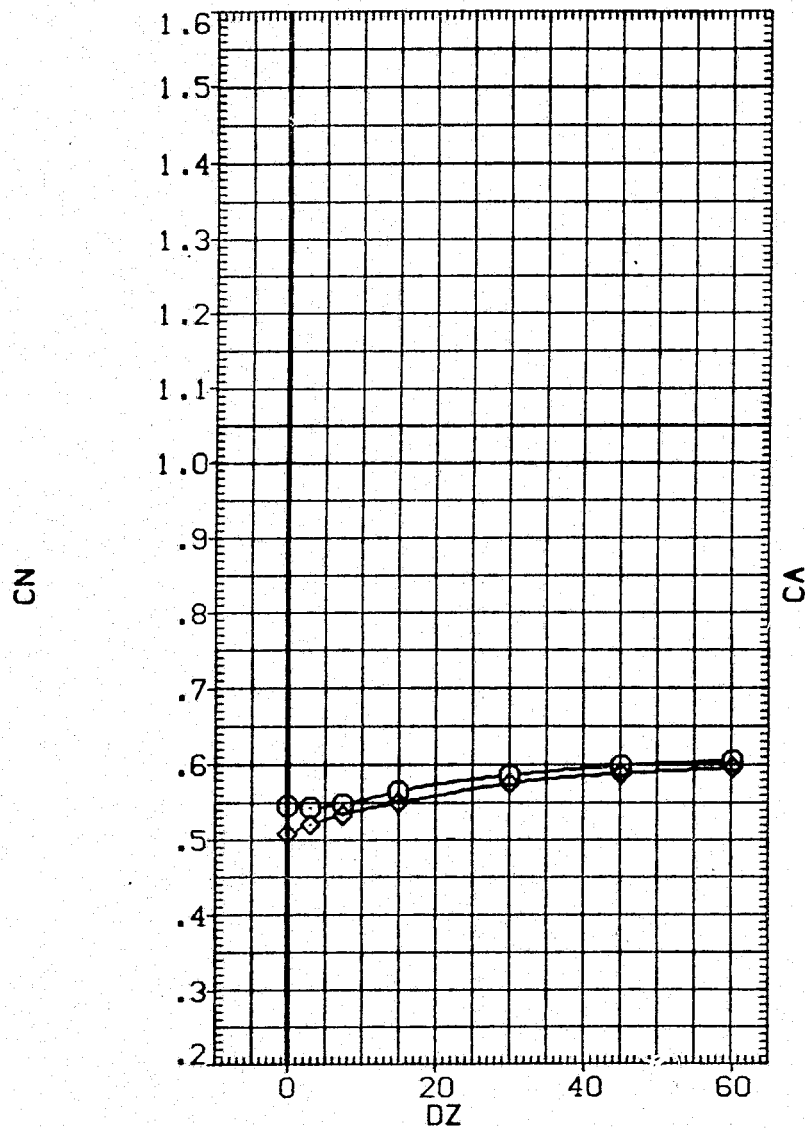


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER

(B)ALPHA0= 12.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOF1)	CA20 747/1 01 S1 AT38 AT39
(SGNOJ1)	DATA NOT AVAILABLE
(SGNOL1)	DATA NOT AVAILABLE
(SGNON1)	CA20 747/1 01 S1

ORBITER DATA

ORBITER DATA

BETAC	BETAD	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	2690.0000	SQ.FT.
.000	.000	.000	.000	LREF	474.8100	IN.
.000	.000	.000	.000	BREF	935.6800	IN.
.000	.000	.000	.000	XMRP	1109.0000	IN.X0
.000	.000	.000	.000	YMRP	.0000	IN.Y0
.000	.000	.000	.000	ZMRP	375.0000	IN.Z0
				SCALE	.0300	

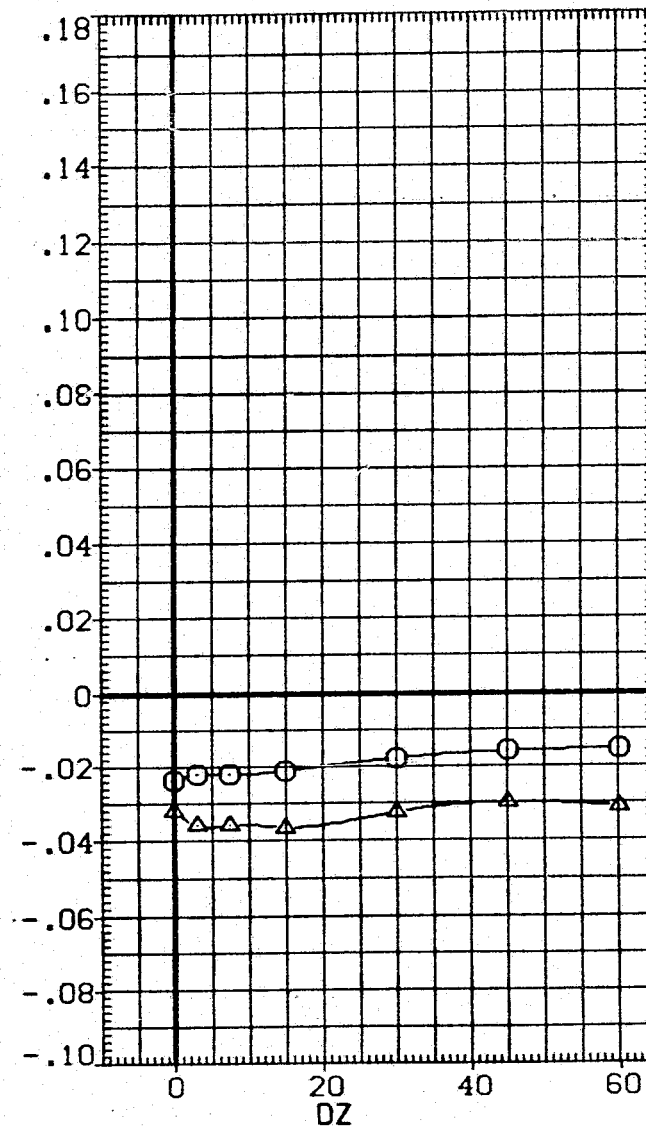
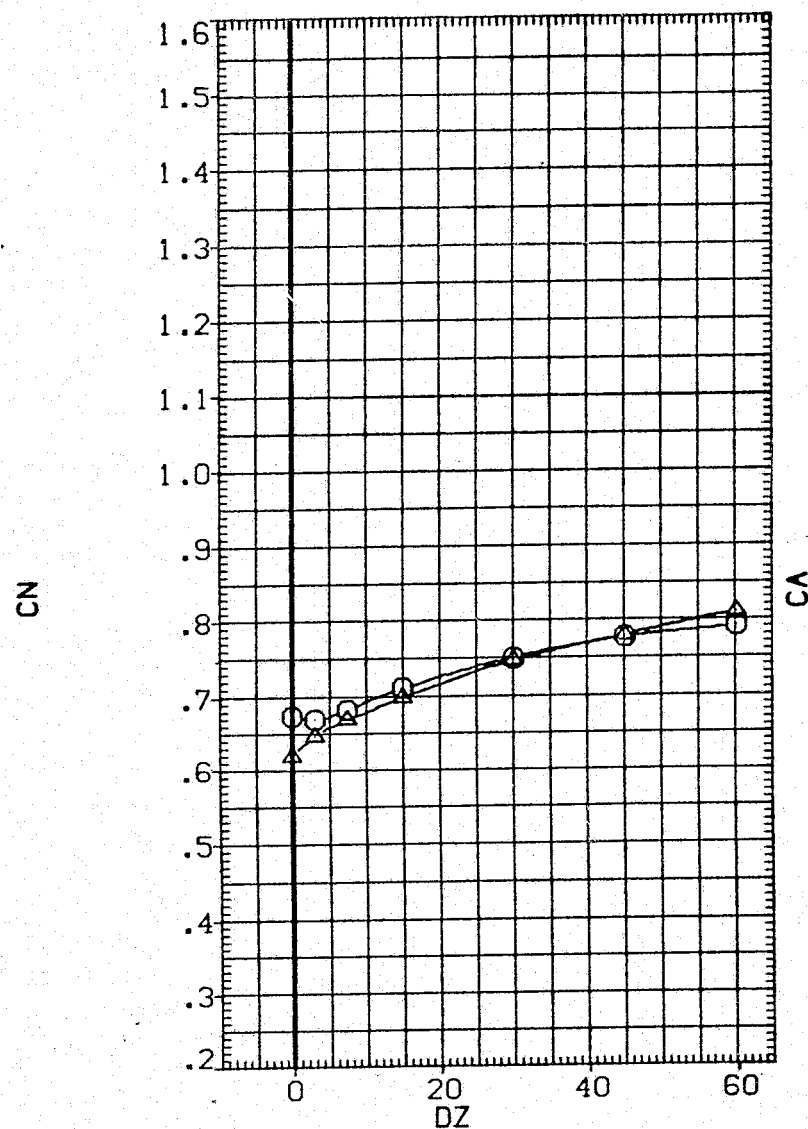


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER
(C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION ORBITER DATA

(XGNB45) ○ CA20 747/1 01 S1 AT38 AT39

(XGNB46) □ DATA NOT AVAILABLE

(XGNB47) ◇ DATA NOT AVAILABLE

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	2690.0000	SQ.FT.
.000	.000	.000	.000	LREF	474.8100	IN.
.000	.000	.000	.000	BREF	936.6800	IN.
				XMRP	1109.0000	IN.X0
				YMRP	.0000	IN.Y0
				ZMRP	375.0000	IN.Z0
				SCALE	.0300	

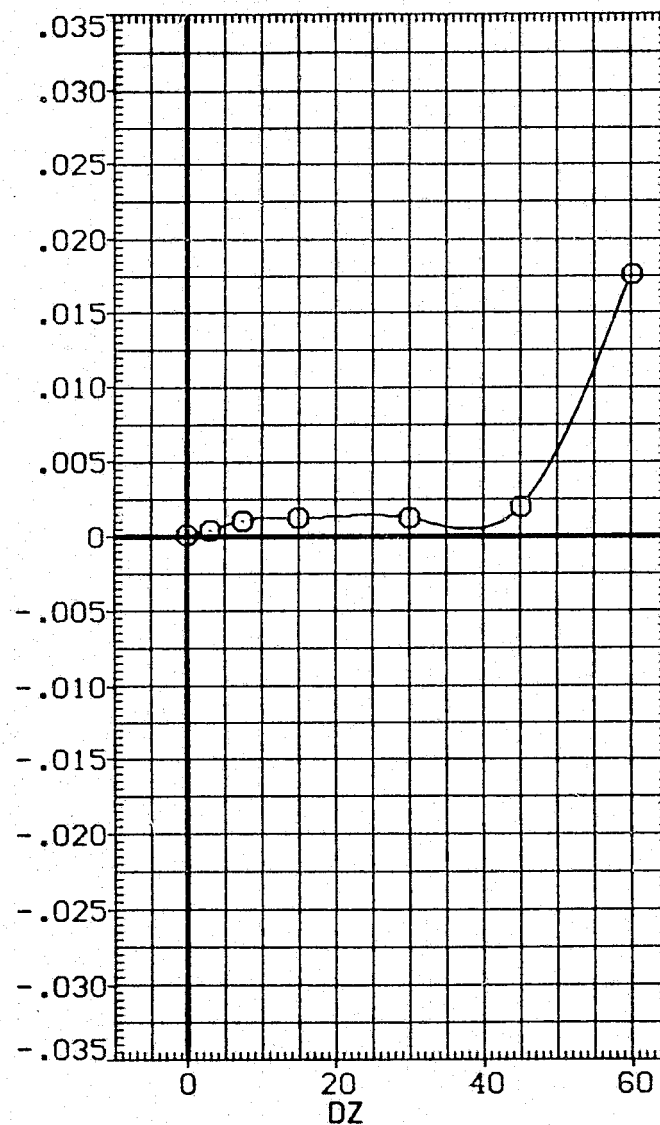
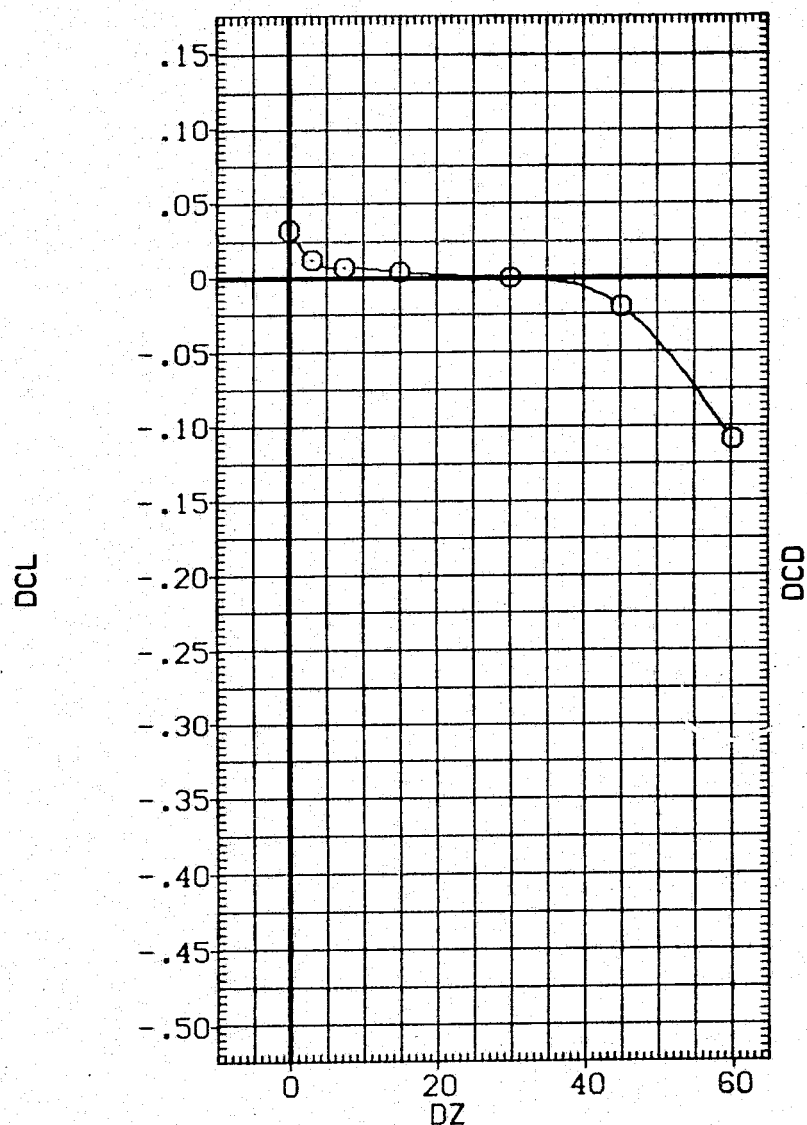


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER

(A) ALPHA0 = 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(XGNB45) □ DATA NOT AVAILABLE
 (XGNB46) □ CA20 747/1 01 S1 AT38 AT39 ORBITER DATA
 (XGNB47) ◇ DATA NOT AVAILABLE

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	2690.0000	50.FT.
.000	.000	.000	.000	LREF	474.8100	IN.
.000	.000	.000	.000	BREF	936.6800	IN.
				XMRP	1109.0000	IN.X0
				YMRP	.0000	IN.Y0
				ZMRP	375.0000	IN.Z0
				SCALE	.0300	

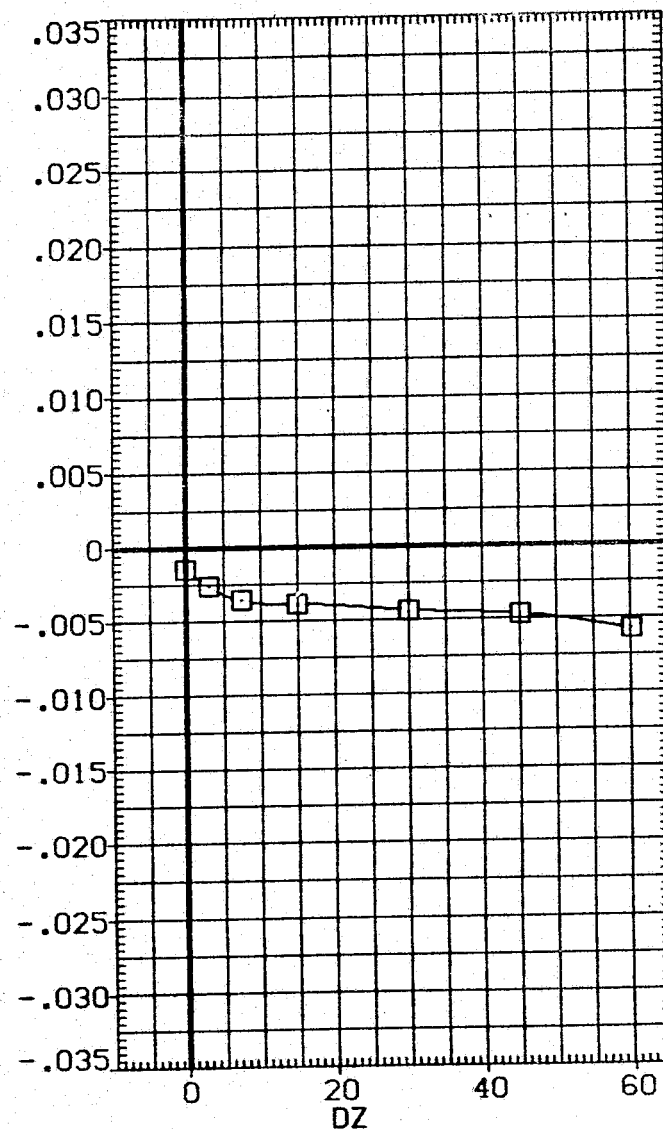
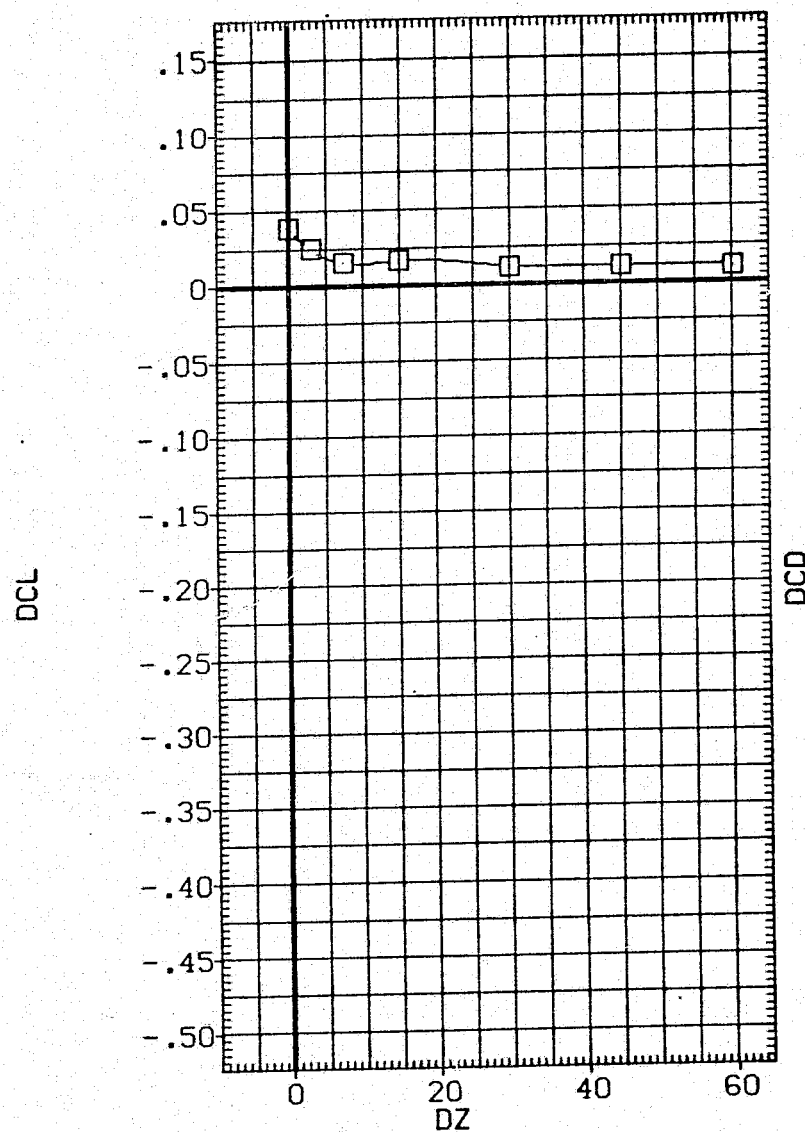


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER
 (B)ALPHA0= 12.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	
(XGNB45)	DATA NOT AVAILABLE	
(XGNB46)	DATA NOT AVAILABLE	
(XGNB47)	CA20 747/1 01 S1 AT38 AT39	ORBITER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	2690.0000	SQ.FT.
.000	.000	.000	.000	LREF	474.8100	IN.
.000	.000	.000	.000	BREF	936.6800	IN.
				XMRP	1109.0000	IN.X0
				YMRP	.0000	IN.Y0
				ZMRP	375.0000	IN.Z0
				SCALE	.0300	

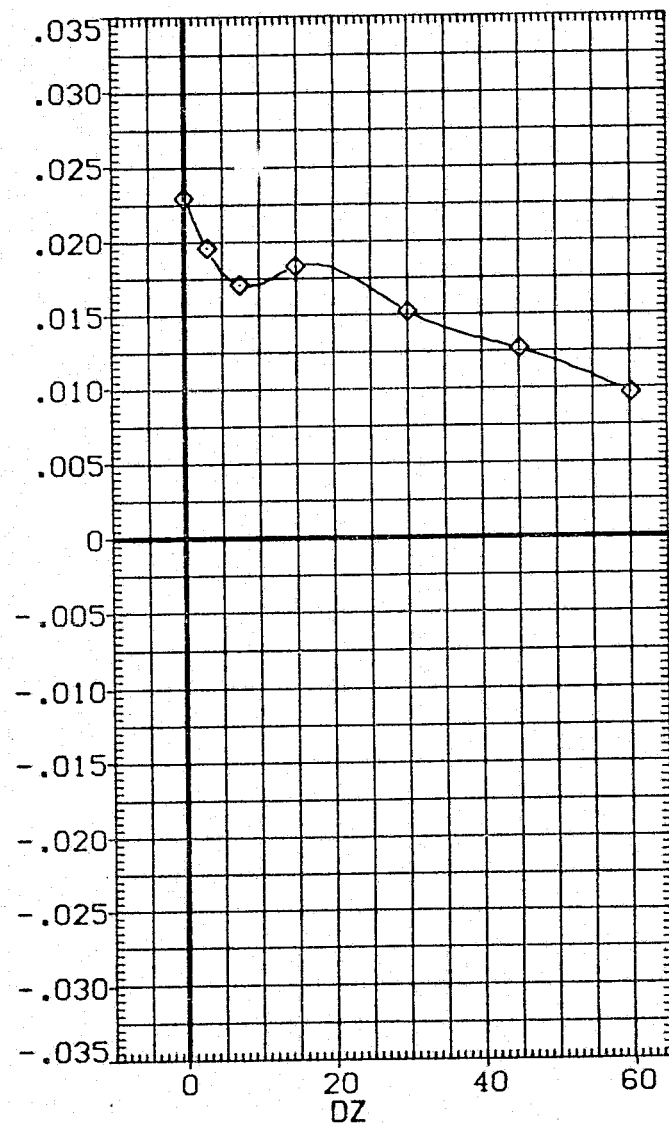
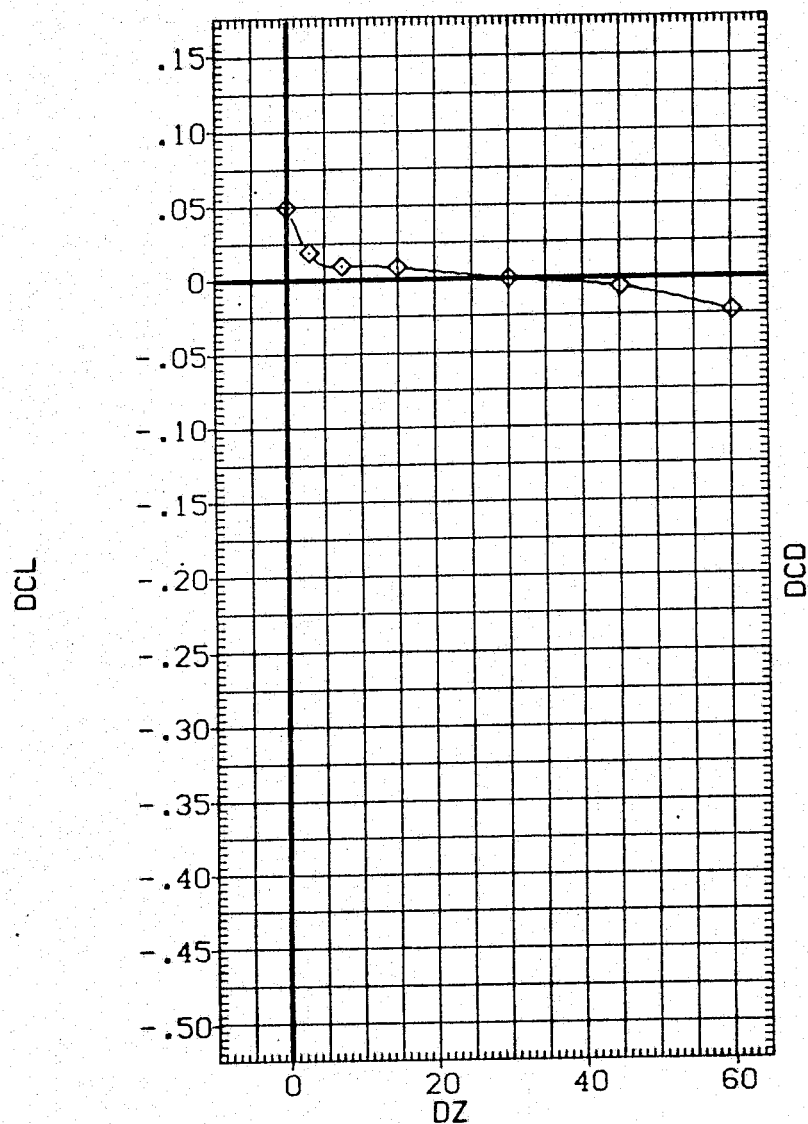


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER
 (C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (XGNB45) □ CA20 747/1 01 S1 AT38 AT39
 (XGNB46) □ DATA NOT AVAILABLE
 (XGNB47) ◇ DATA NOT AVAILABLE

ORBITER DATA

BETAC	BETAO	DX	DY
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1103.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

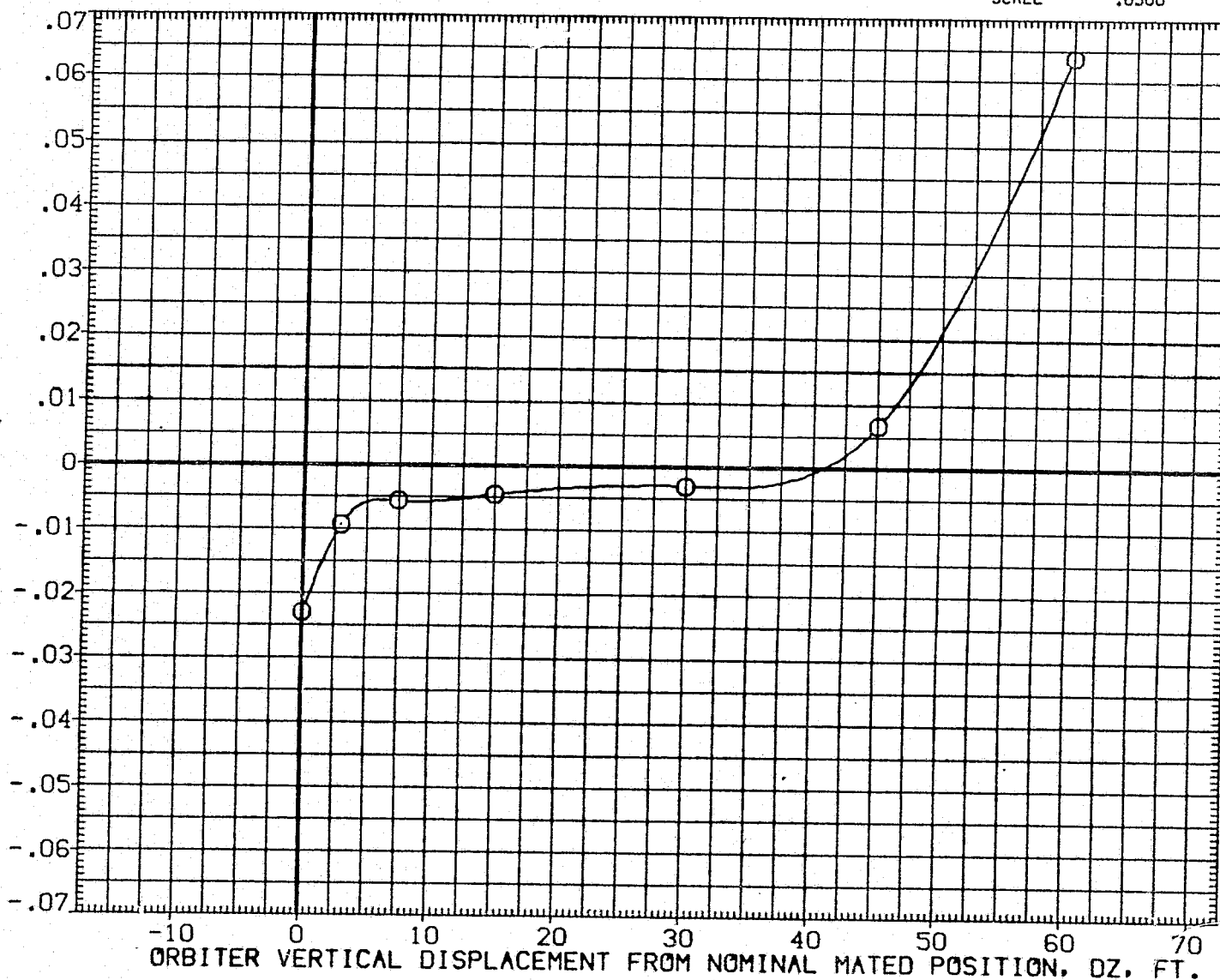


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER

(A) ALPHA0= 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(XGNB45) DATA NOT AVAILABLE
(XGNB46) CA20 747/1 01 S1 AT38 AT39
(XGNB47) DATA NOT AVAILABLE

ORBITER DATA

BETAC	BETA0	DX	DY
.000	.000	.000	.000
.000	.000	.000	.000
.000	.000	.000	.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM



FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER
(B) ALPHA0= 12.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	BETA0	DX	DY	REFERENCE INFORMATION	
(XGNB45)	DATA NOT AVAILABLE	.000	.000	.000	.000	SREF	2690.0000 SQ.FT.
(XGNB46)	DATA NOT AVAILABLE	.000	.000	.000	.000	LREF	474.8100 IN.
(XGNB47)	CA20 747/1 01 S1 AT38 AT39 ORBITER DATA	.000	.000	.000	.000	BREF	936.6800 IN.
						XMRP	1109.0000 IN.X0
						YMRP	.0000 IN.Y0
						ZMRP	375.0000 IN.Z0
						SCALE	.0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DC LM

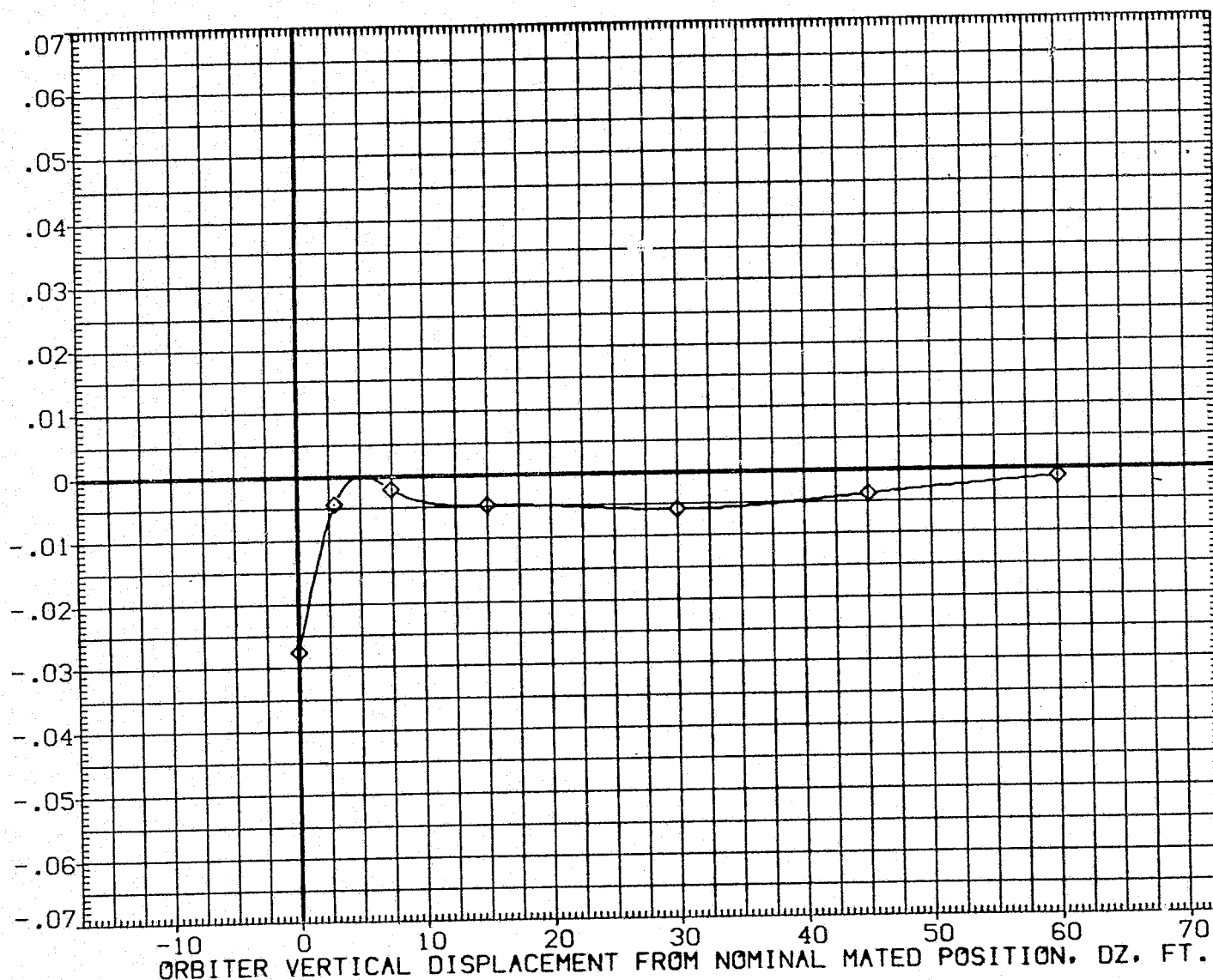


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER
(C) ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION ORBITER DATA

(XGNB45) ○ CA20 747/1 01 S1 AT38 AT39

(XGNB46) □ DATA NOT AVAILABLE

(XGNB47) ◇ DATA NOT AVAILABLE

BETAC	BETA0	OX	OY	REFERENCE INFORMATION		
.000	.000	.000	.000	SREF	2690.0000	SQ.FT.
.000	.000	.000	.000	LREF	474.8100	IN.
.000	.000	.000	.000	BREF	936.6800	IN.
				XMRP	1109.0000	IN.X0
				YMRP	.0000	IN.Y0
				ZMRP	375.0000	IN.Z0
				SCALE	.0300	

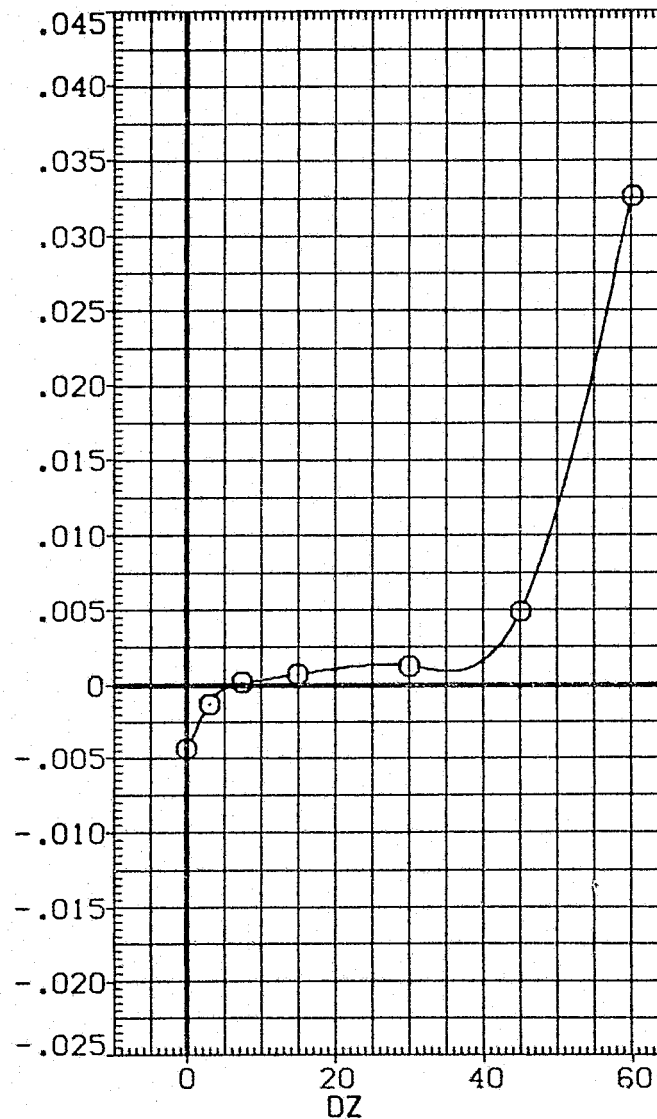
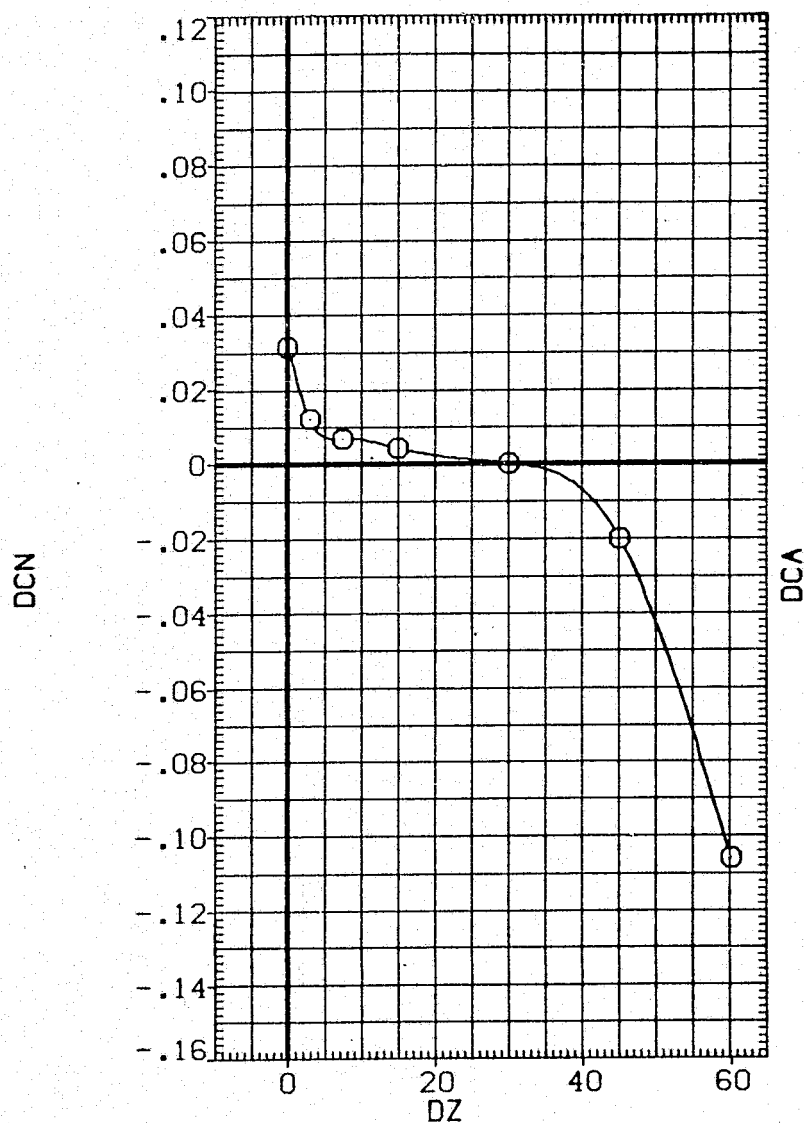


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER

(A)ALPHA0= 8.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(XGNB45)	DATA NOT AVAILABLE
(XGNB46)	CA20 747/1 01 S1 AT38 AT39 ORBITER DATA
(XGNB47)	DATA NOT AVAILABLE

BETAC	BETA0	DX	DY	REFERENCE INFORMATION	
.000	.000	.000	.000	SREF	2690.0000 SQ.FT.
.000	.000	.000	.000	LREF	474.8100 IN.
.000	.000	.000	.000	BREF	936.6800 IN.
				XMRP	1109.0000 IN.X0
				YMRP	.0000 IN.Y0
				ZMRP	375.0000 IN.Z0
				SCALE	.0300

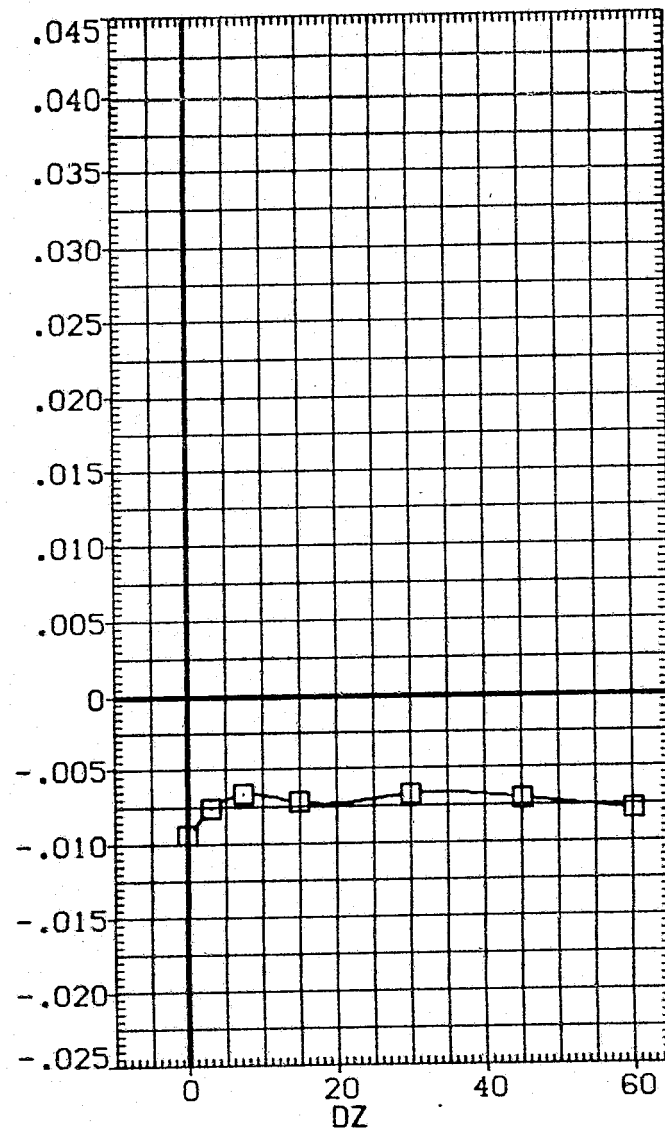
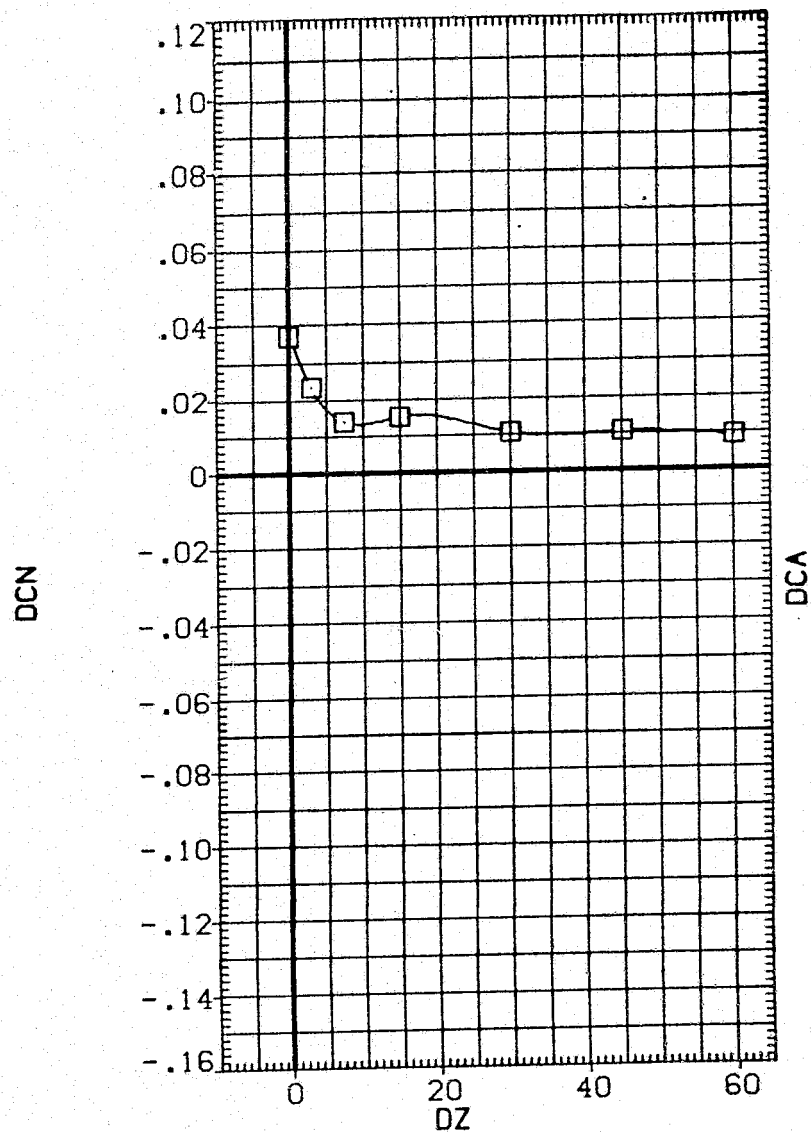


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER
(B) ALPHA0 = 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (XGNB45) DATA NOT AVAILABLE
 (XGNB46) DATA NOT AVAILABLE
 (XGNB47) CA20 747/1 01 S1 AT38 AT39 ORBITER DATA

BETAC	BETA0	DX	DY	REFERENCE INFORMATION	
.000	.000	.000	.000	SREF	2690.0000 SQ.FT.
.000	.000	.000	.000	LREF	474.8100 IN.
.000	.000	.000	.000	BREF	936.6800 IN.
				XMRP	1109.0000 IN.X0
				YMRP	.0000 IN.Y0
				ZMRP	375.0000 IN.Z0
				SCALE	.0300

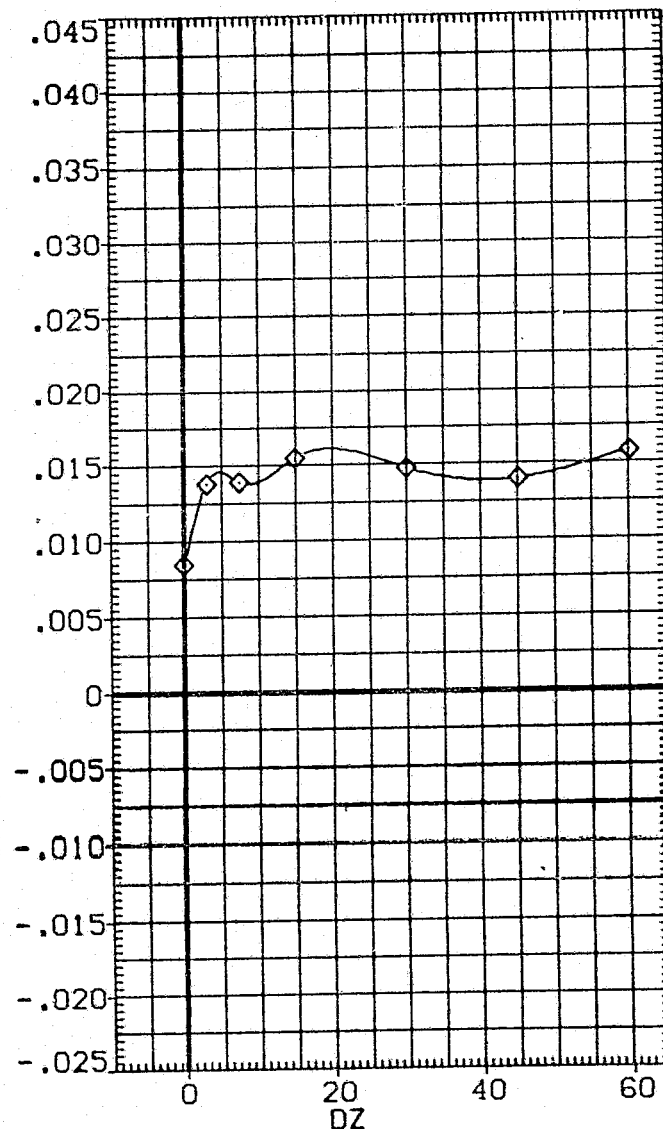
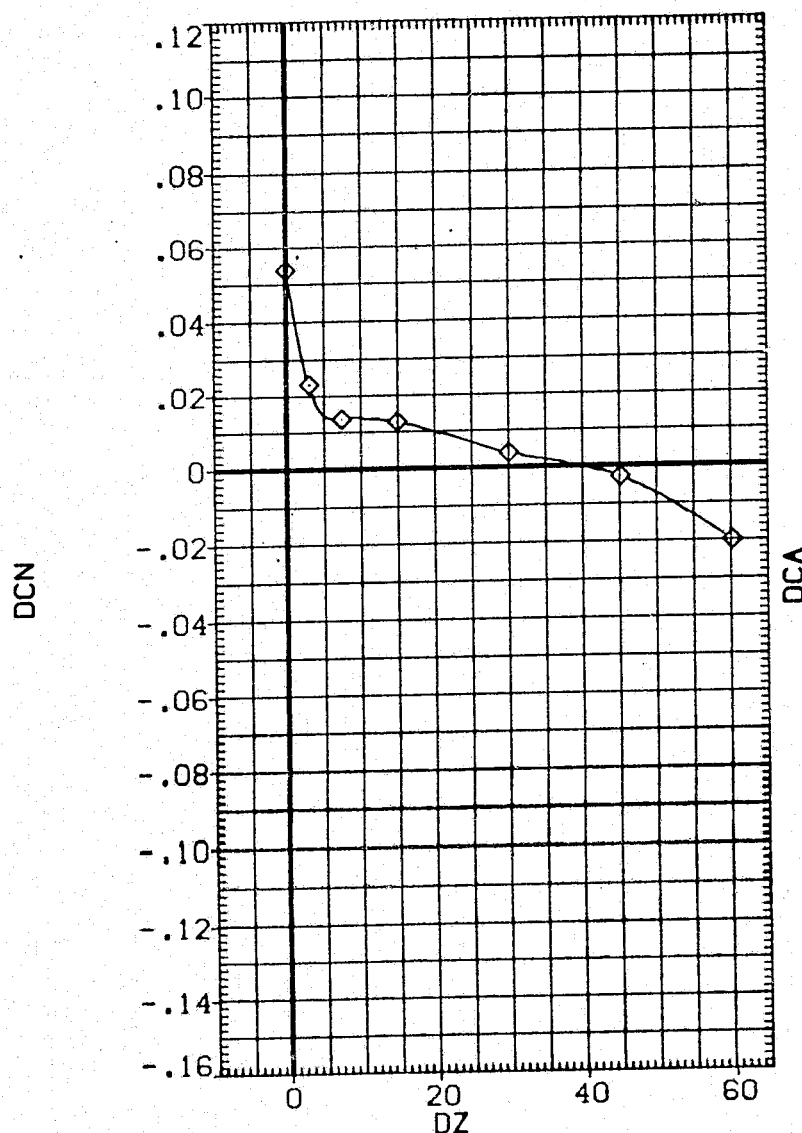


FIG 21A EFFECTS OF ATTACH HARDWARE ON ORBITER IN PRESENCE OF CARRIER
 (C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOH1) CA20 747/1 01 SI AT38 AT39
 (SGNOD1) CA20 747/0 01 SI AT38 AT39

ORBITER DATA IORB ELEVON DX
 ORBITER DATA 8.000 5.000 .000

REFERENCE INFORMATION
 DY .000 SREF 2690.0000 SQ.FT.
 .000 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

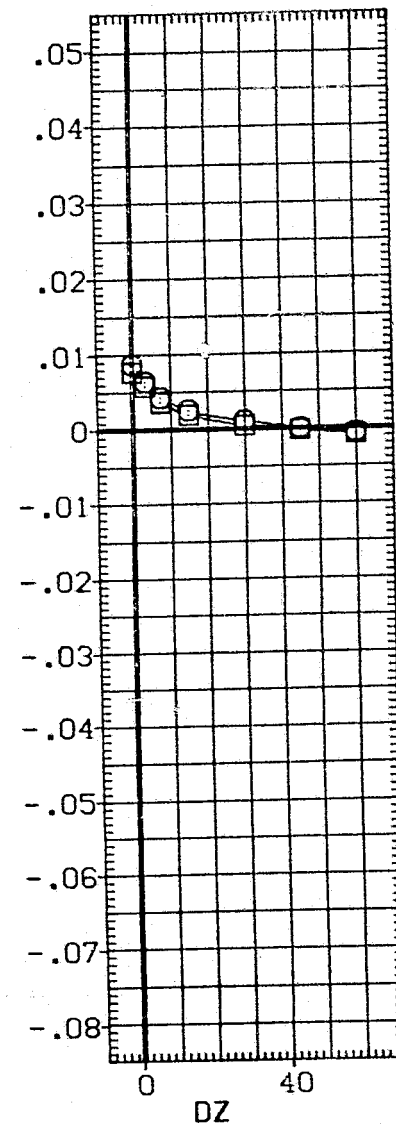
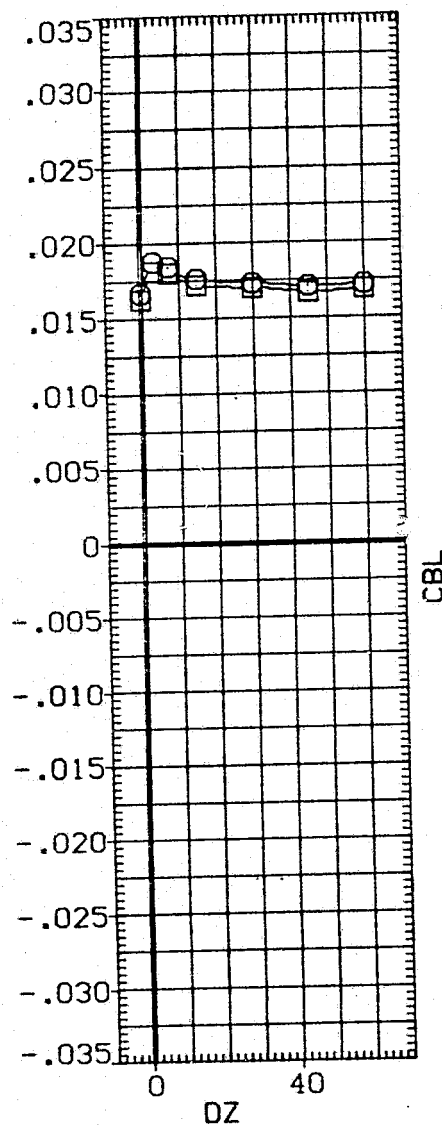
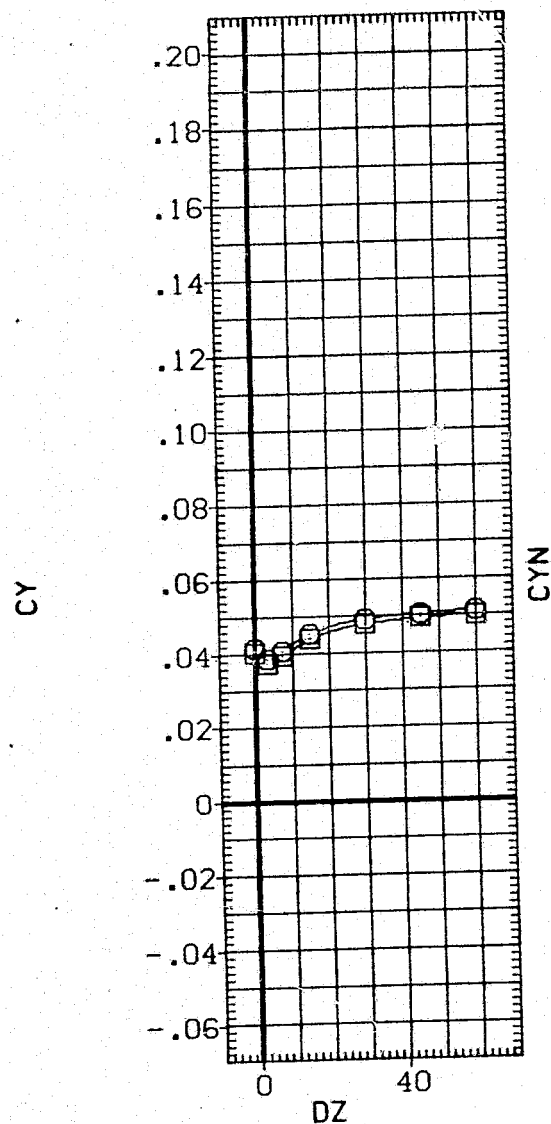


FIG 21B SIDESLIP EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (A) BETA0 = -5.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOH1)	CA20 747/1 01 S1 AT38 AT39
(SGNOD1)	CA20 747/0 01 S1 AT38 AT39

ORBITER DATA	ICRB	ELEVON	DX	DY
ORBITER DATA	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

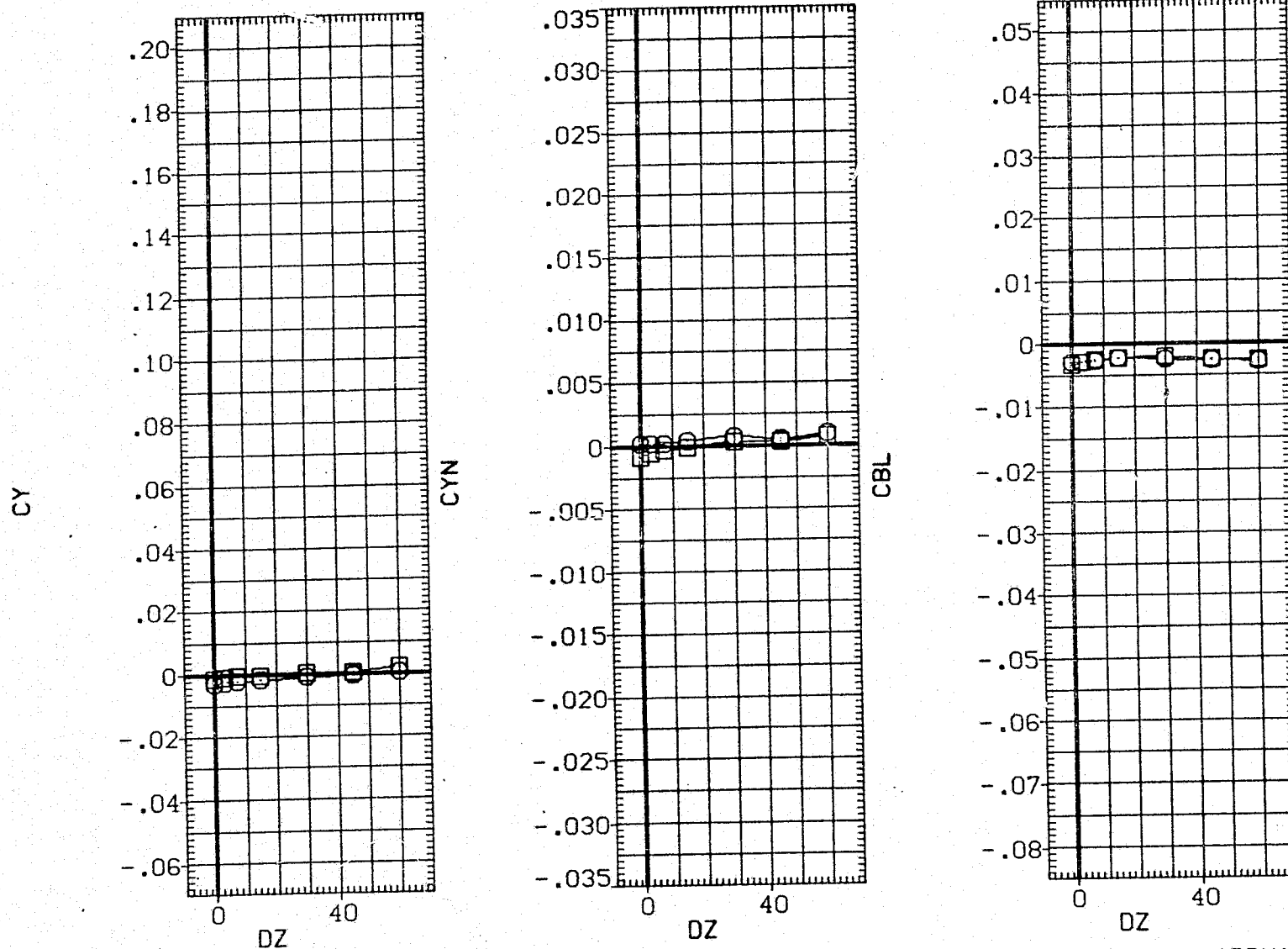


FIG 21B SIDESLIP EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B)BETA0 = .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGN0H1)	CA20 747/1 01 S1 AT38 AT39
(SGN0D1)	CA20 747/0 01 S1 AT38 AT39

ORBITER DATA	IORB	ELEVON	DX	DY
ORBITER DATA	8.000	5.000	.000	.000
	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

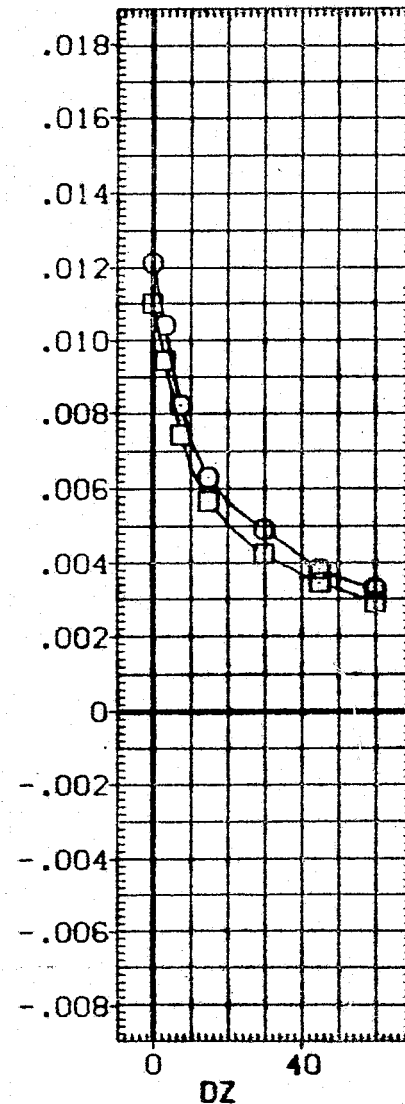
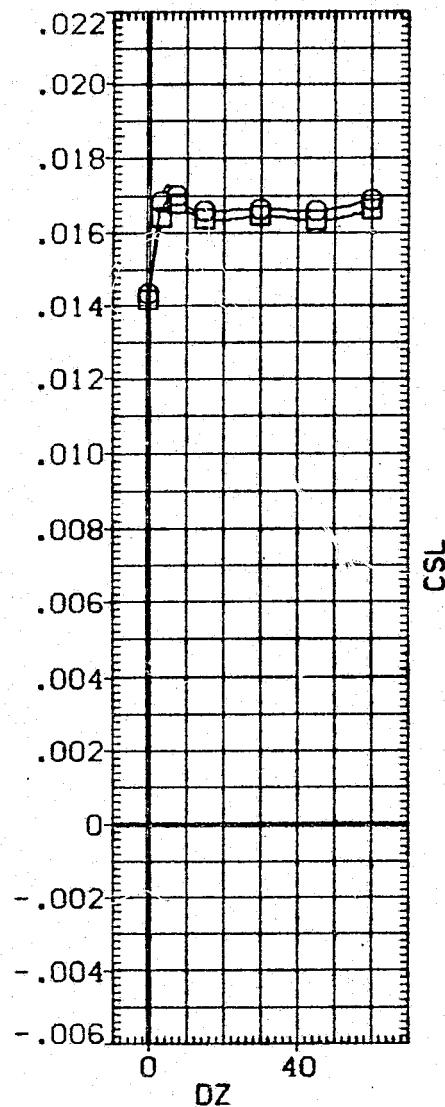
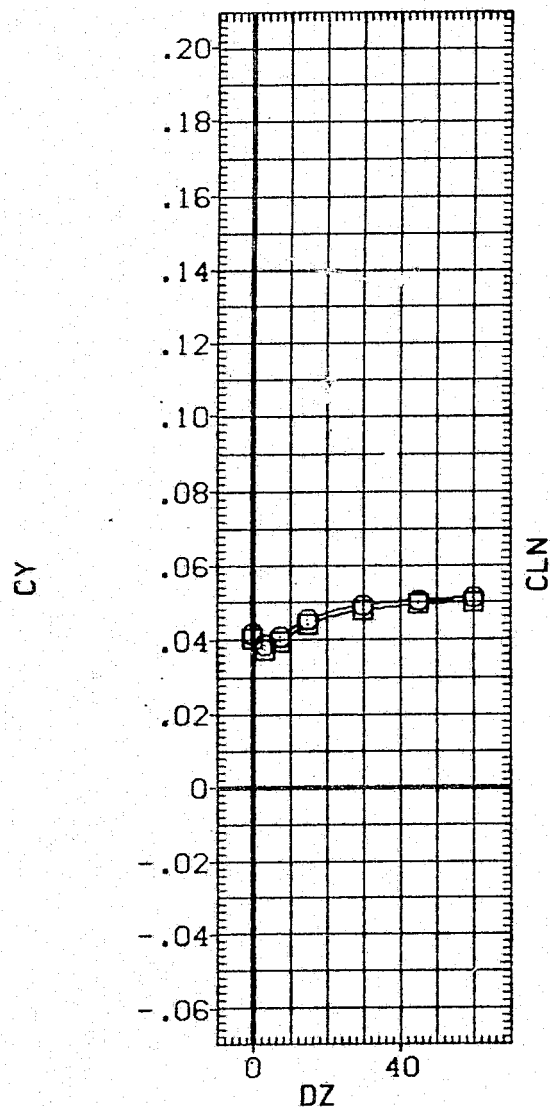


FIG 21B SIDESLIP EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) $\beta_{A0} = -5.00$

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOH1)	CA20 747/1 01 S1 AT38 AT39
(SGNOD1)	CA20 747/0 01 S1 AT38 AT39

	IORB	ELEVON	DX	DY
ORBITER DATA	8.000	5.000	.000	.000
ORBITER DATA	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

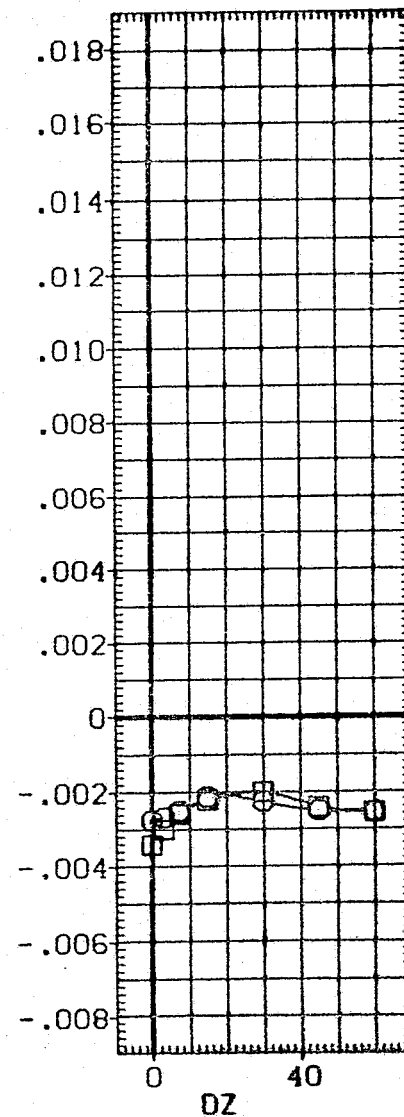
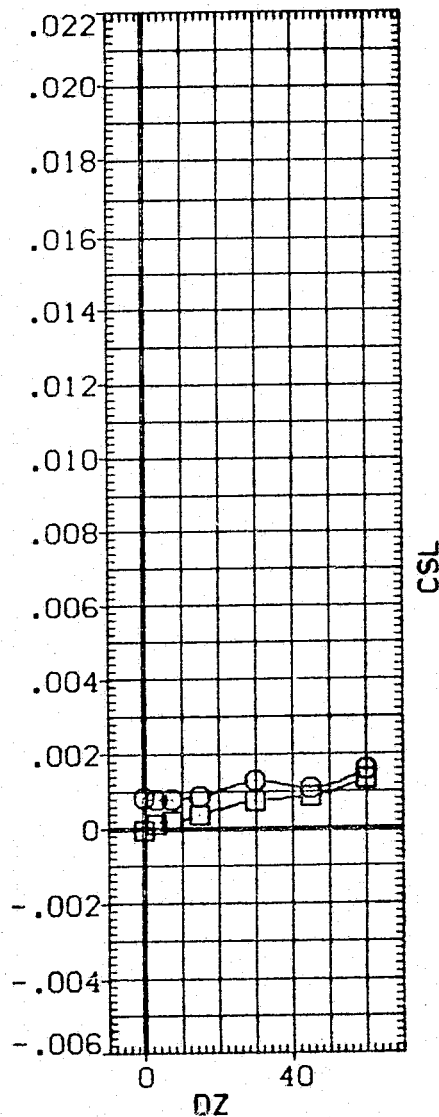
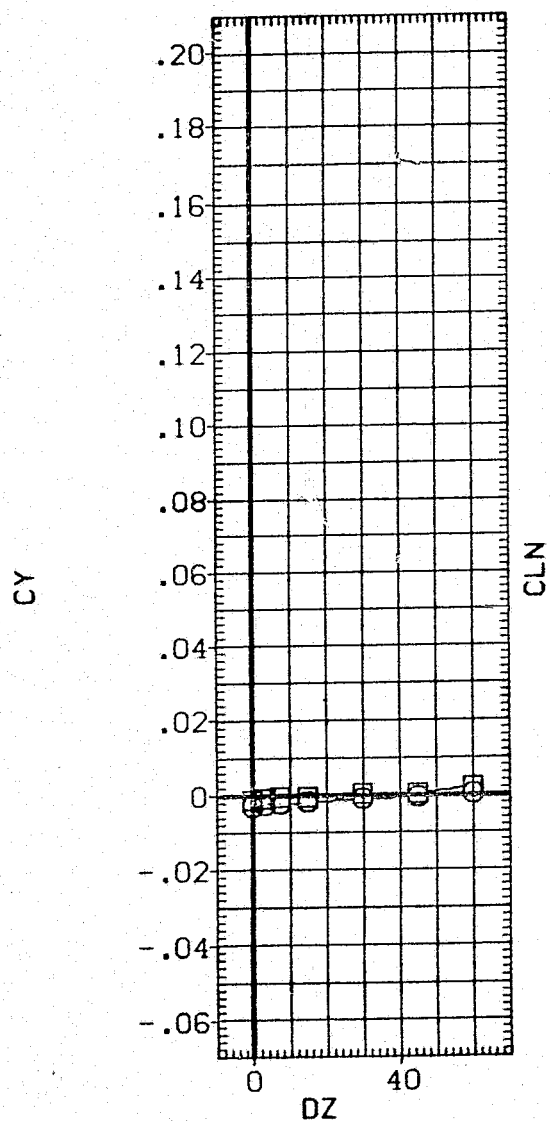


FIG 21B SIDESLIP EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (B)BETA0 = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (XGNB48) CA20 747/1 01 S1 AT38 AT39
 (XGNB43) CA20 747/0 01 S1 AT38 AT39

ORBITER DATA BETAC -5.000
 ORBITER DATA BETAO -5.000
 DX .000
 DY .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.XJ
 YMRP .0000 IN.YJ
 ZMRP 375.0000 IN.ZJ
 SCALE .0300

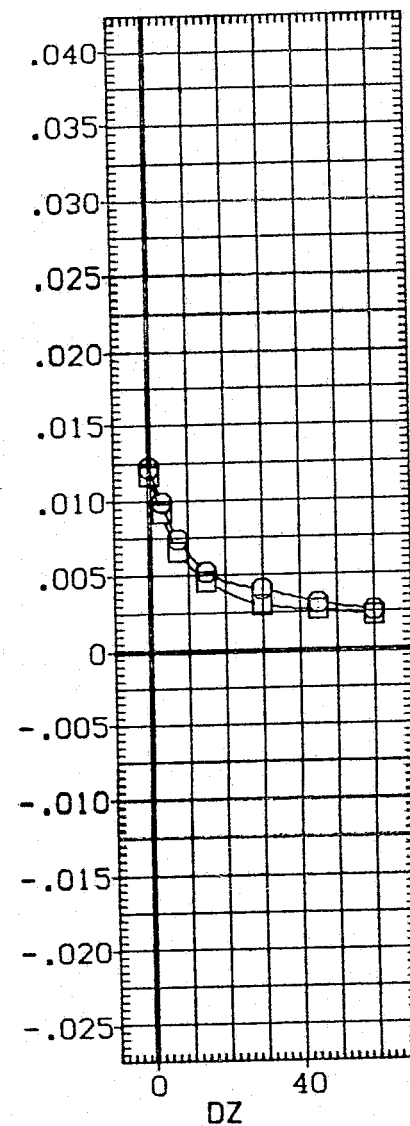
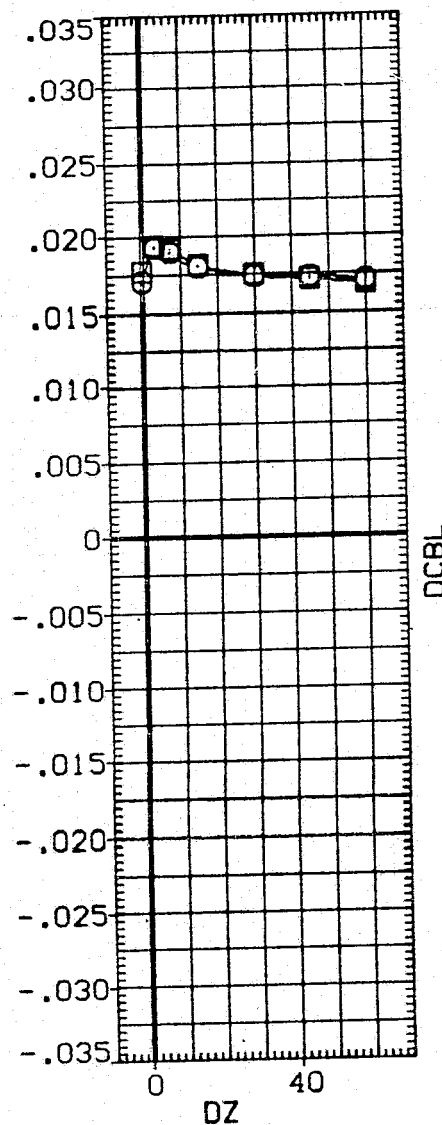
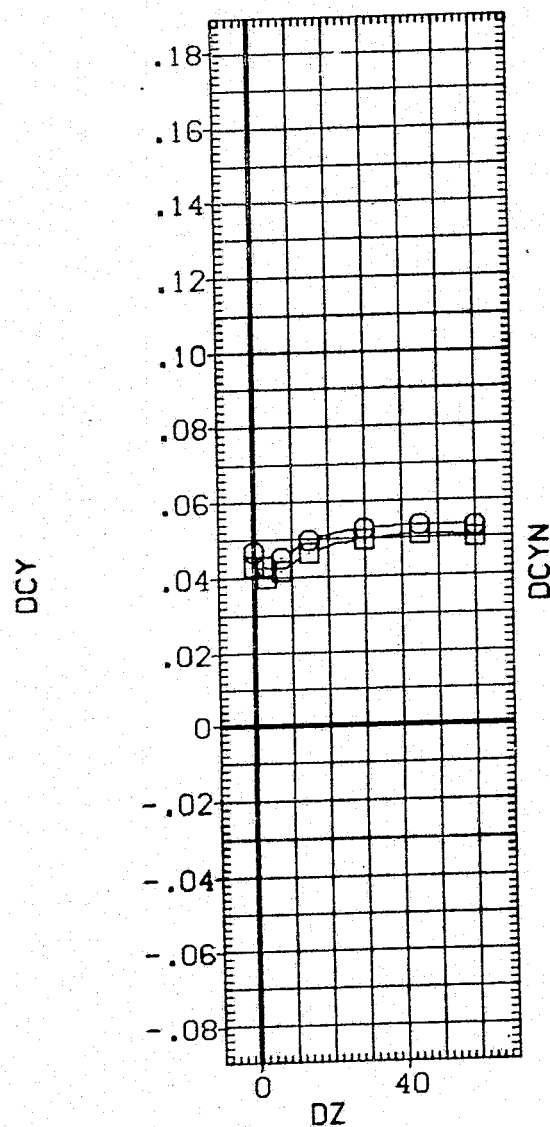


FIG 21B SIDESLIP EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (A) ALPHA0 = 12.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(XGNB48)	CA20 747/1 01 S1 AT38 AT39
(XGNB43)	CA20 747/0 01 S1 AT38 AT39

ORBITER DATA	BETAC	BETA0	DX	DY
ORBITER DATA	-5.000	-5.000	.000	.000
ORBITER DATA	-5.000	-5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

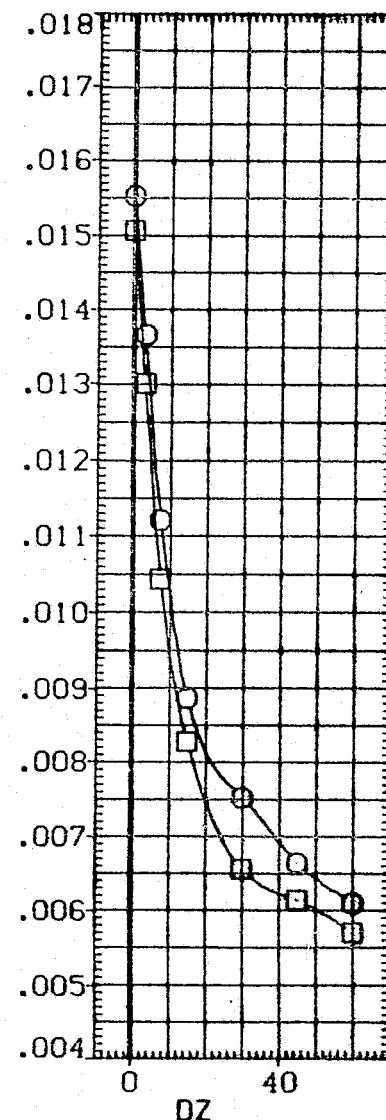
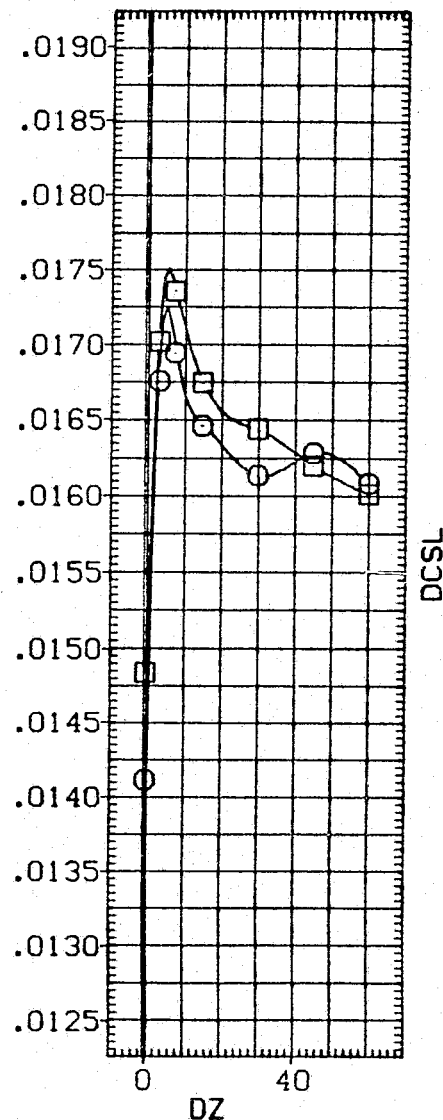
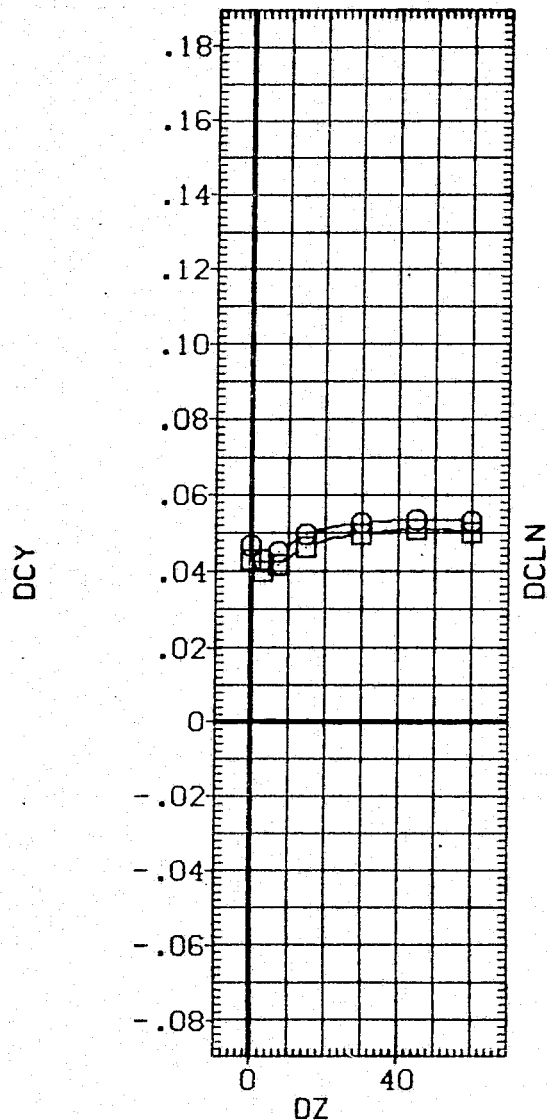


FIG 21B SIDESLIP EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGN081) ○ CA20 747/0 01 S1 AT38 AT39 ORBITER DATA

BETAC BETAO DX DY
 .000 .000 .000 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

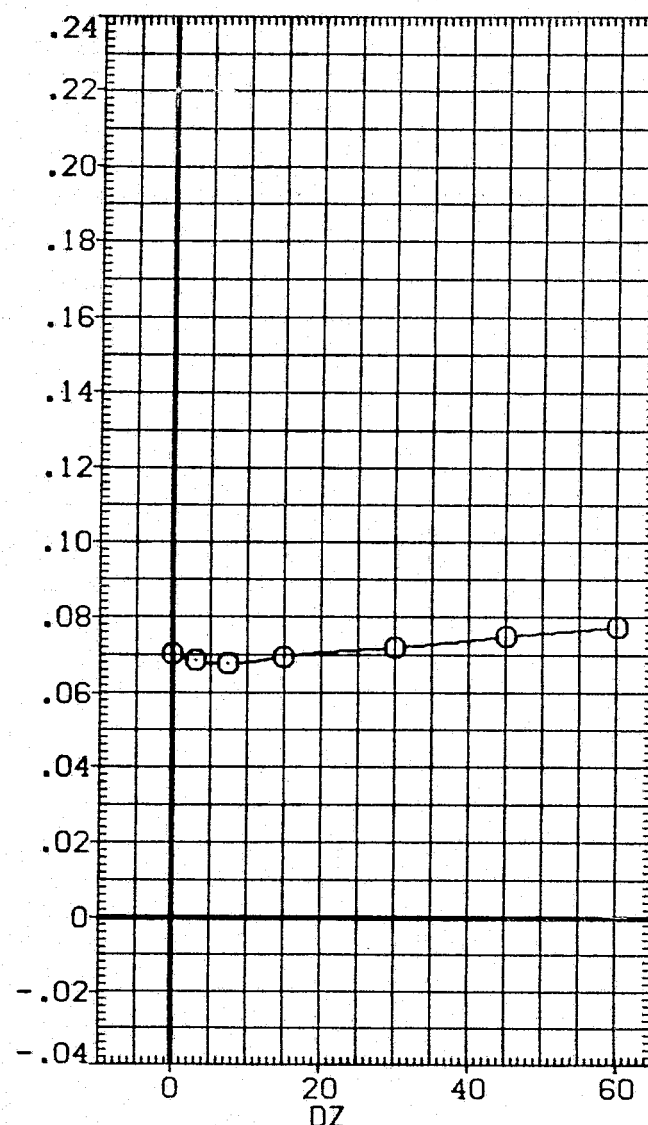
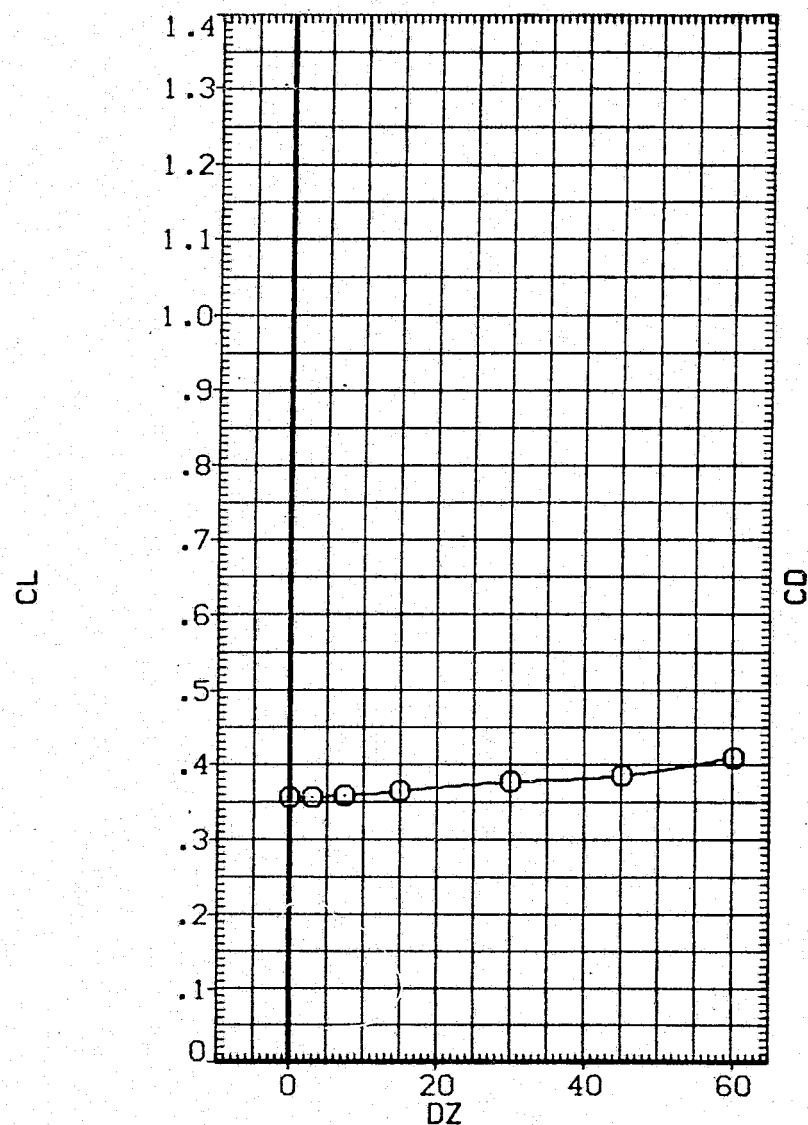


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (A) ALPHA0= 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOB1) ○ CA20 747/0 01 S1 AT38 AT39 ORBITER DATA

BETAC .000
 BETAO .000
 DX .000
 DY .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

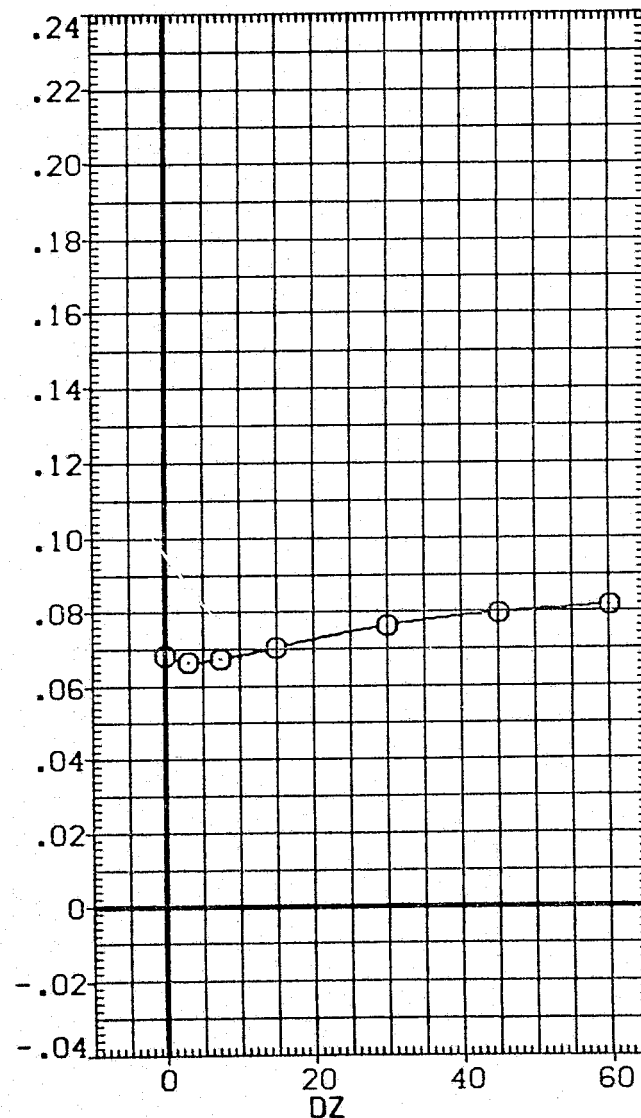
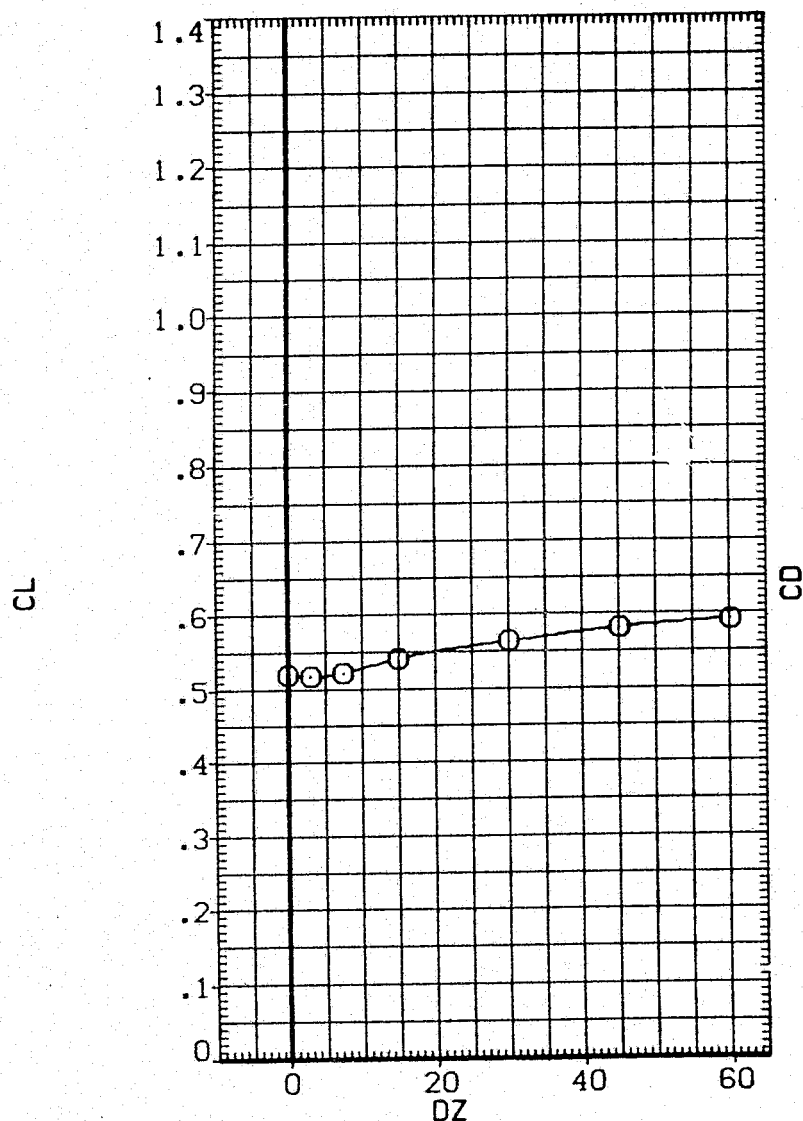


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (B) ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGN081) ○ CA20 747/0 01 S1 AT38 AT39

ORBITER DATA

BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

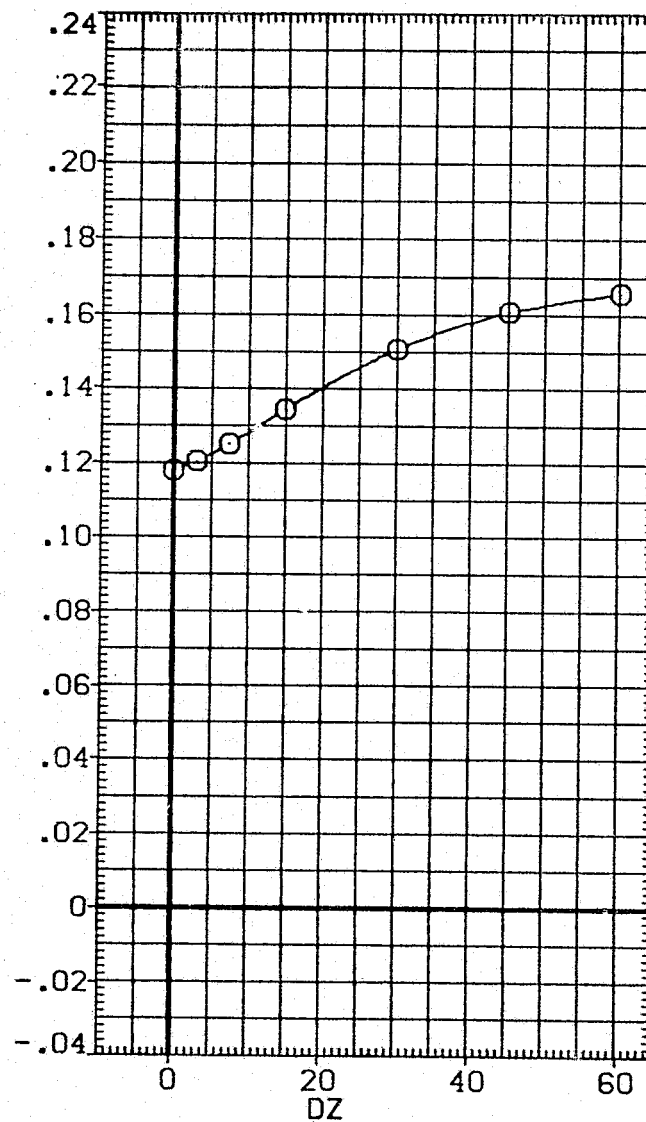
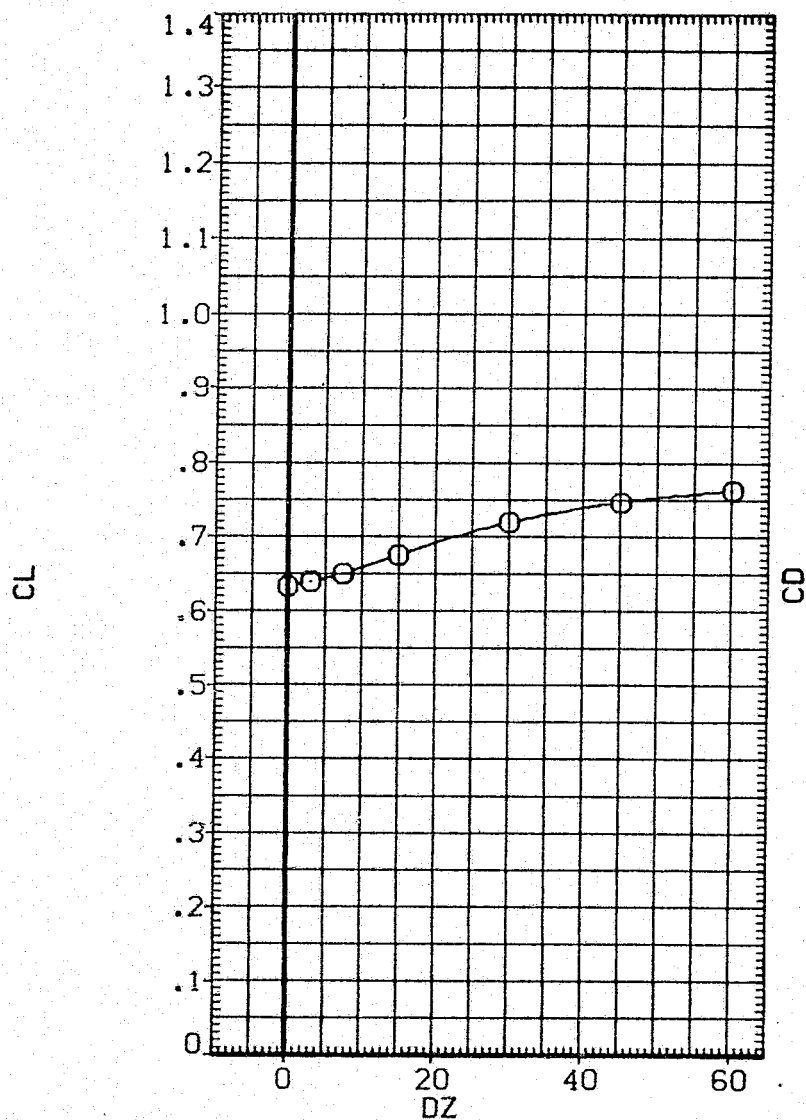


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOB1) ○ CA20 747/0 01 S1 AT38 AT39

ORBITER DATA BETAC BETA0 DX DY
 .000 .000 .000 .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

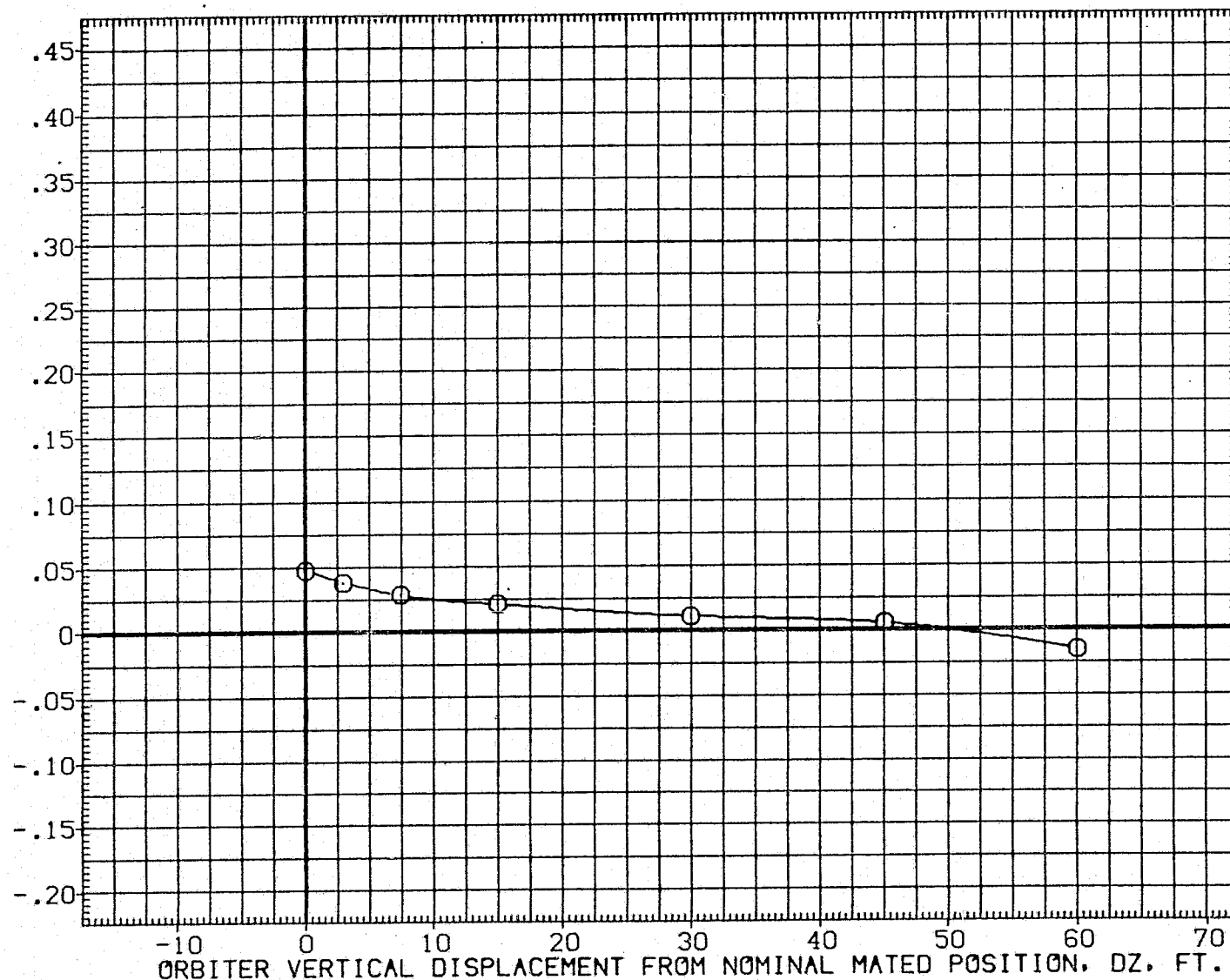


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A)ALPHA0= 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOB1) O CA20 747/0 01 S1 AT38 AT39

ORBITER DATA

BETAC BETAO DX DY
.000 .000 .000 .000

REFERENCE INFORMATION
SREF 2690.0000 50.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

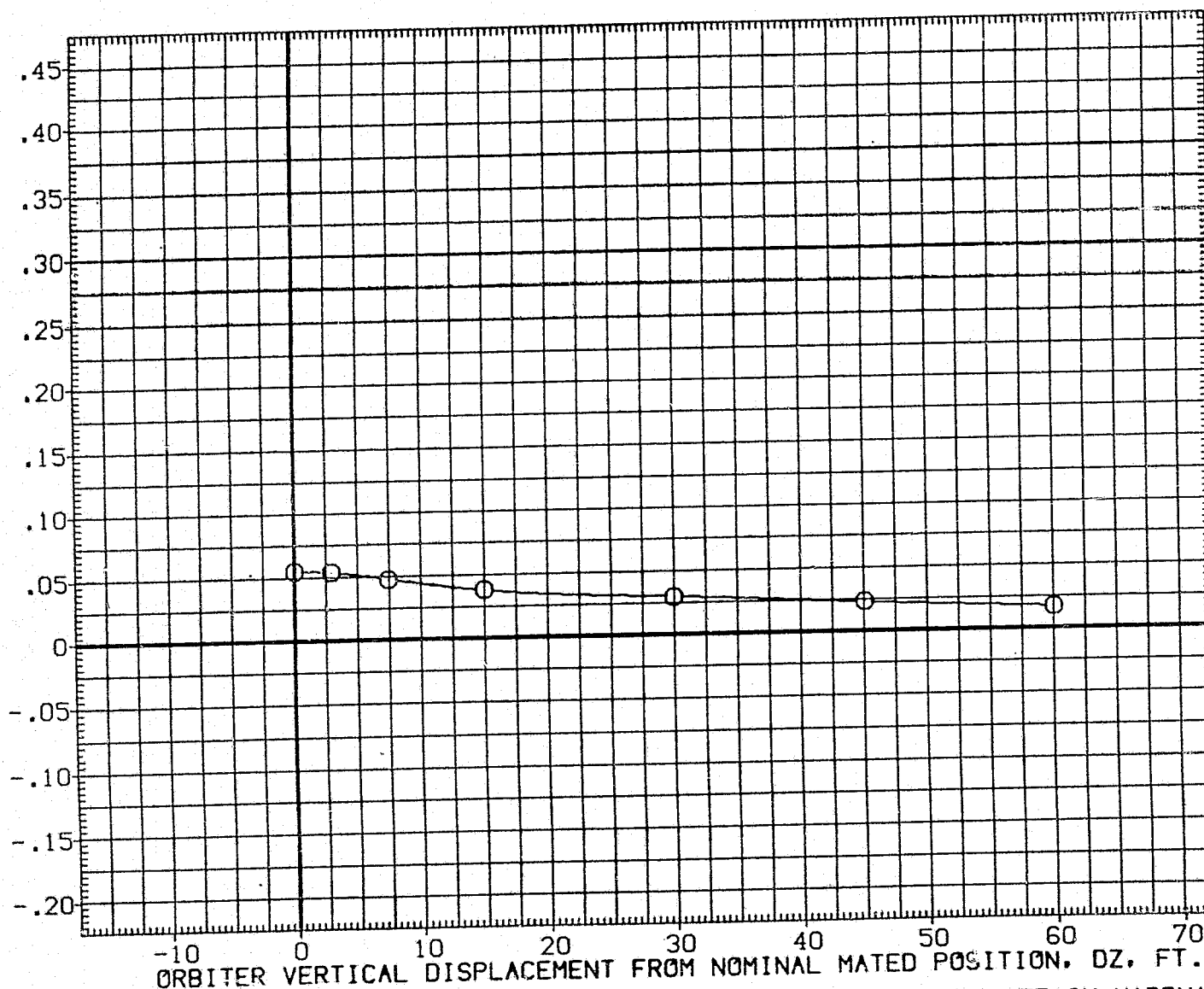


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B)ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOB1) ○ CA20 747/0 01 S1 AT38 AT39

ORBITER DATA

BETAC .000
BETA0 .000
DX .000
DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

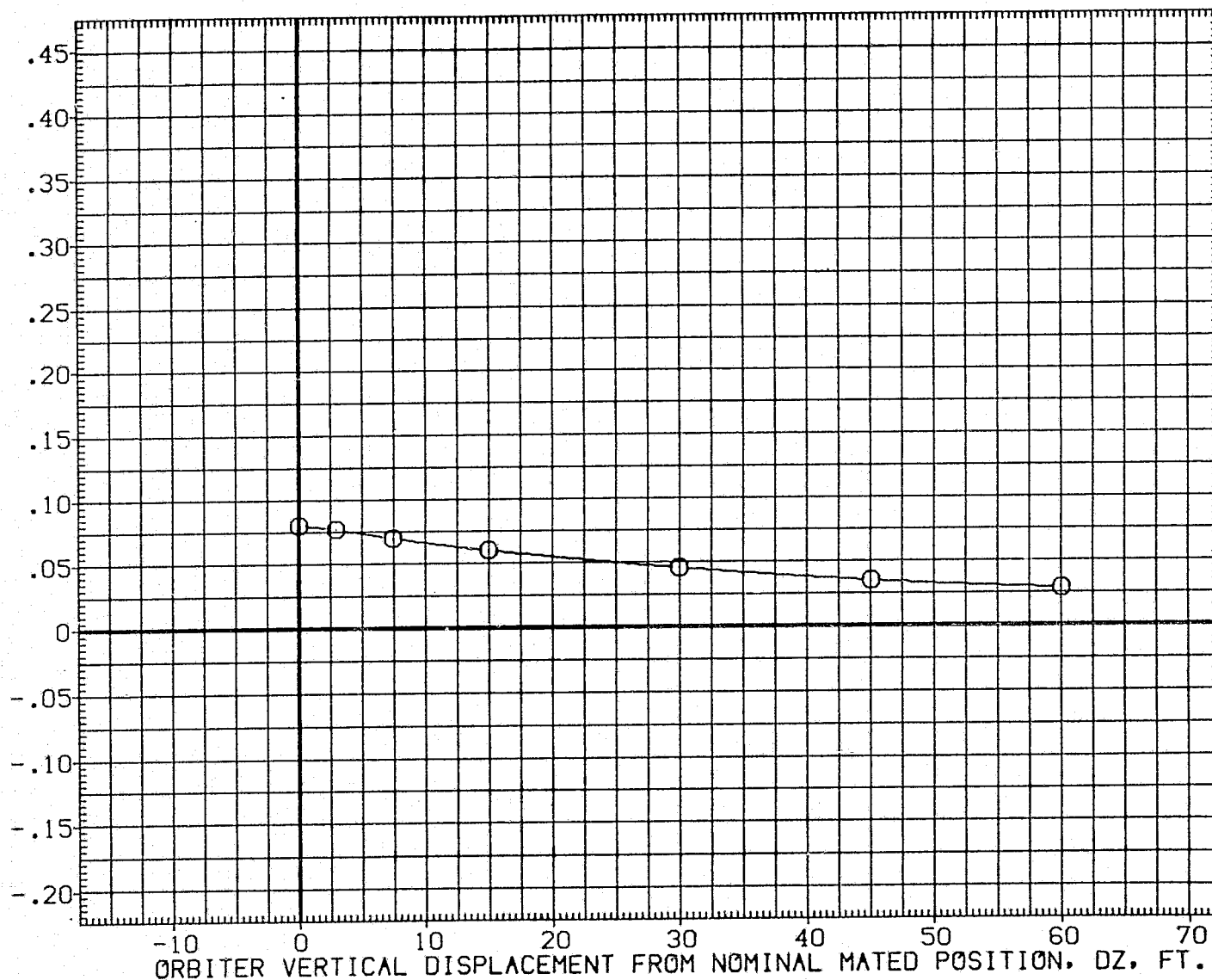


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOB1) ○ CA20 747/0 01 S1 AT38 AT39 ORBITER DATA

BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

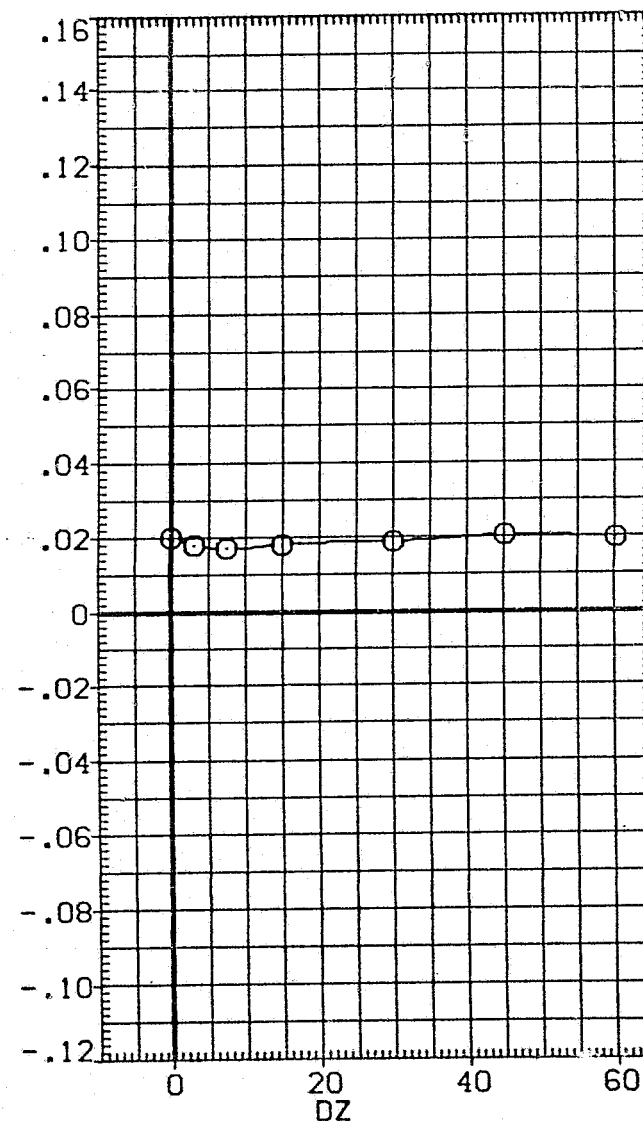
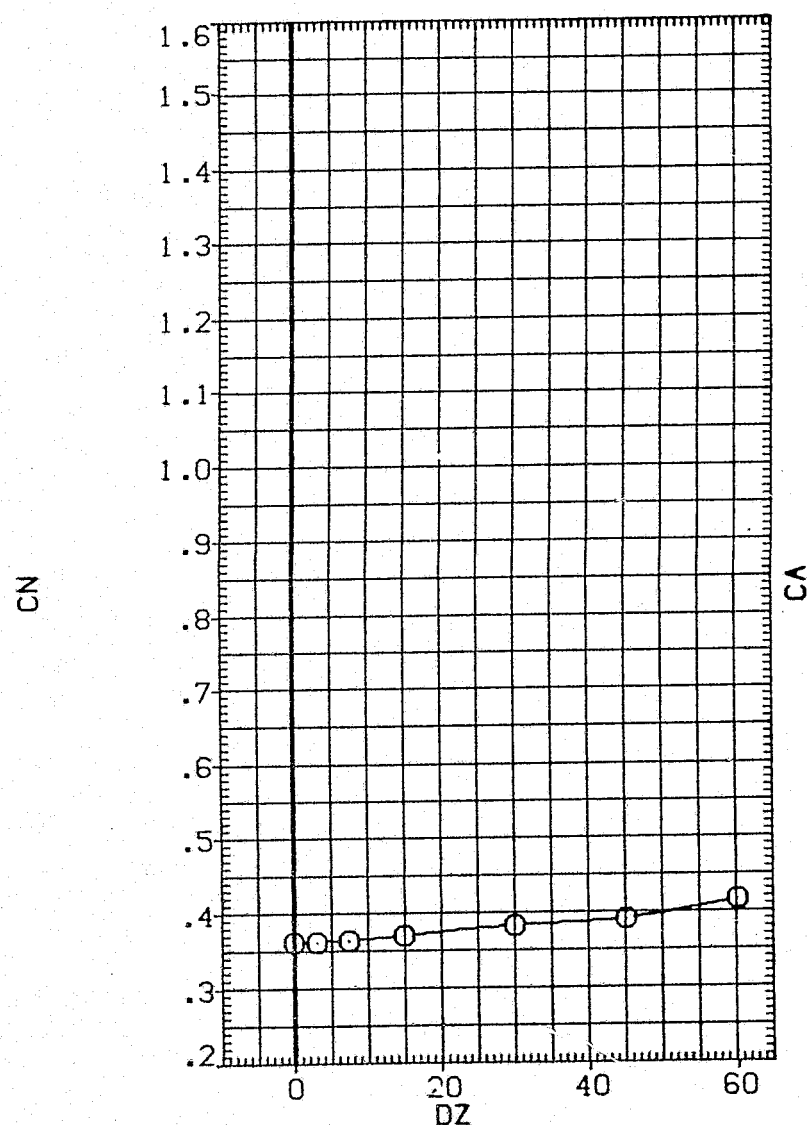


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (A) ALPHA0= 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOB1) ○ CA20 747/0 01 S1 AT38 AT39

ORBITER DATA

BETAC BETAO DX DY
 .000 .000 .000 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

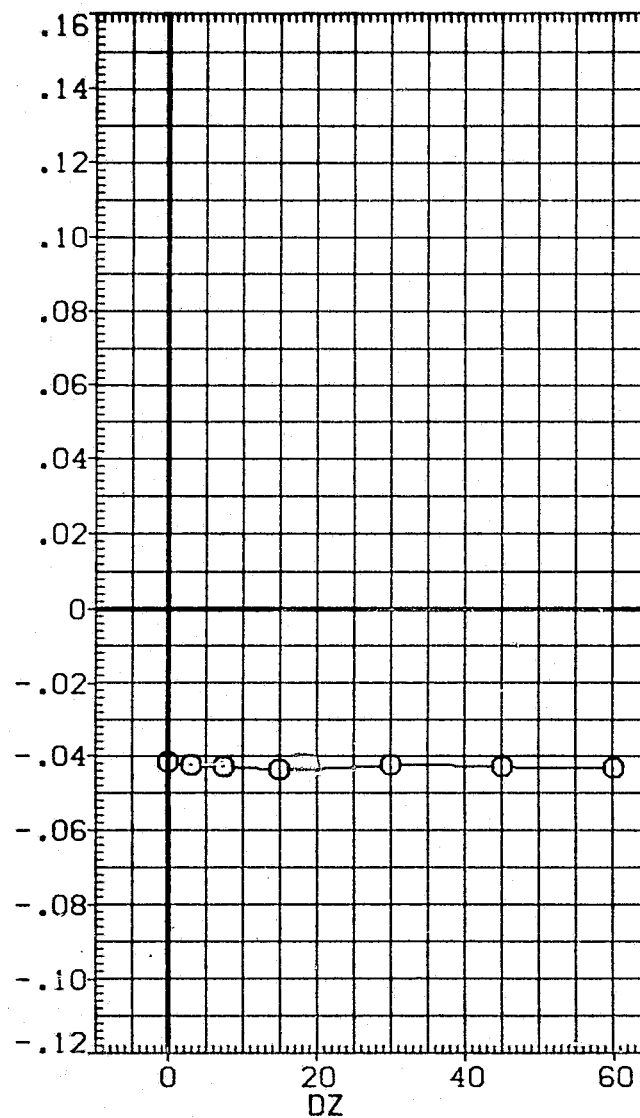
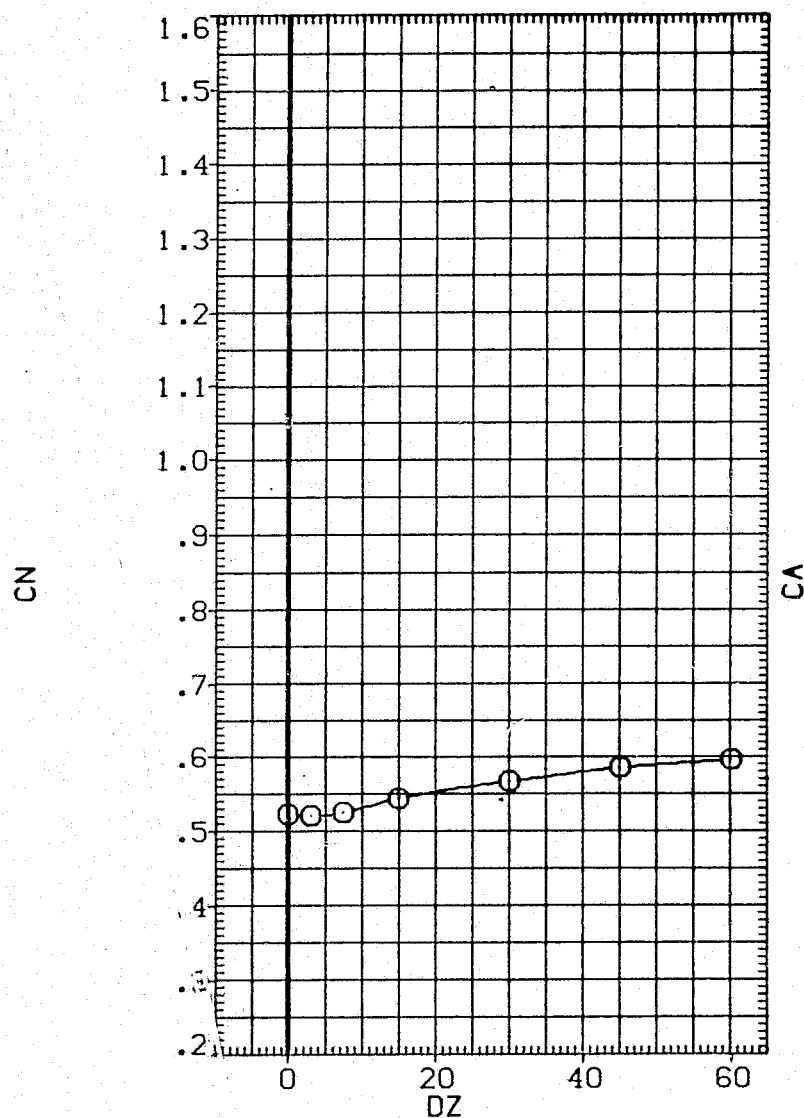


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (B)ALPHA: 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOB1) ○ CA20 747/0 01 S AT38 AT39

ORBITER DATA

BETAC .000

BETA0 .000

DX .000

DY .000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

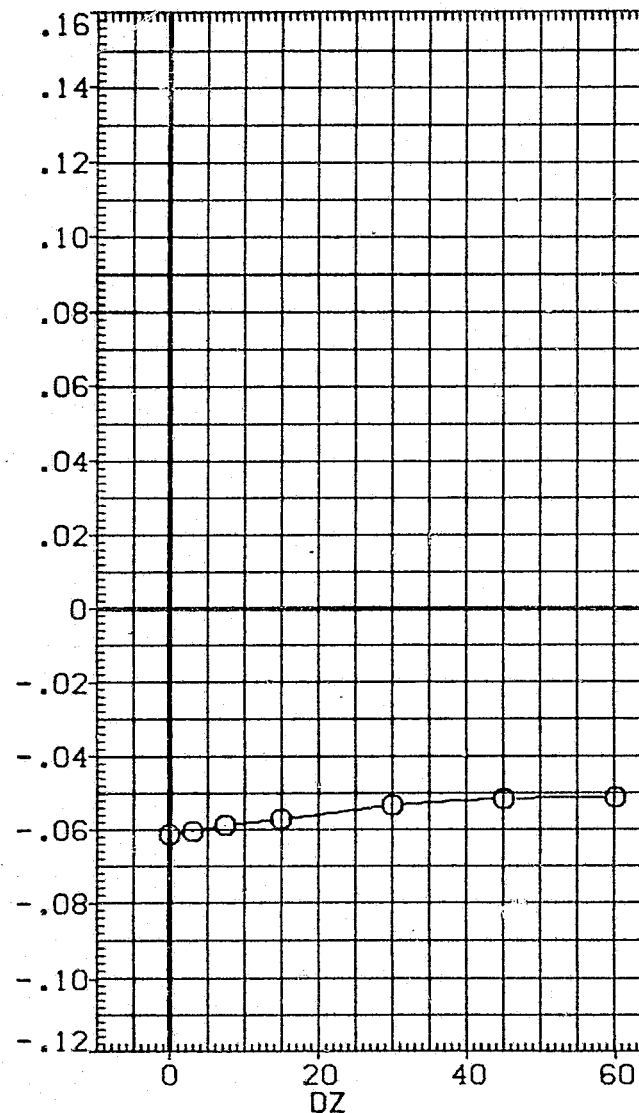
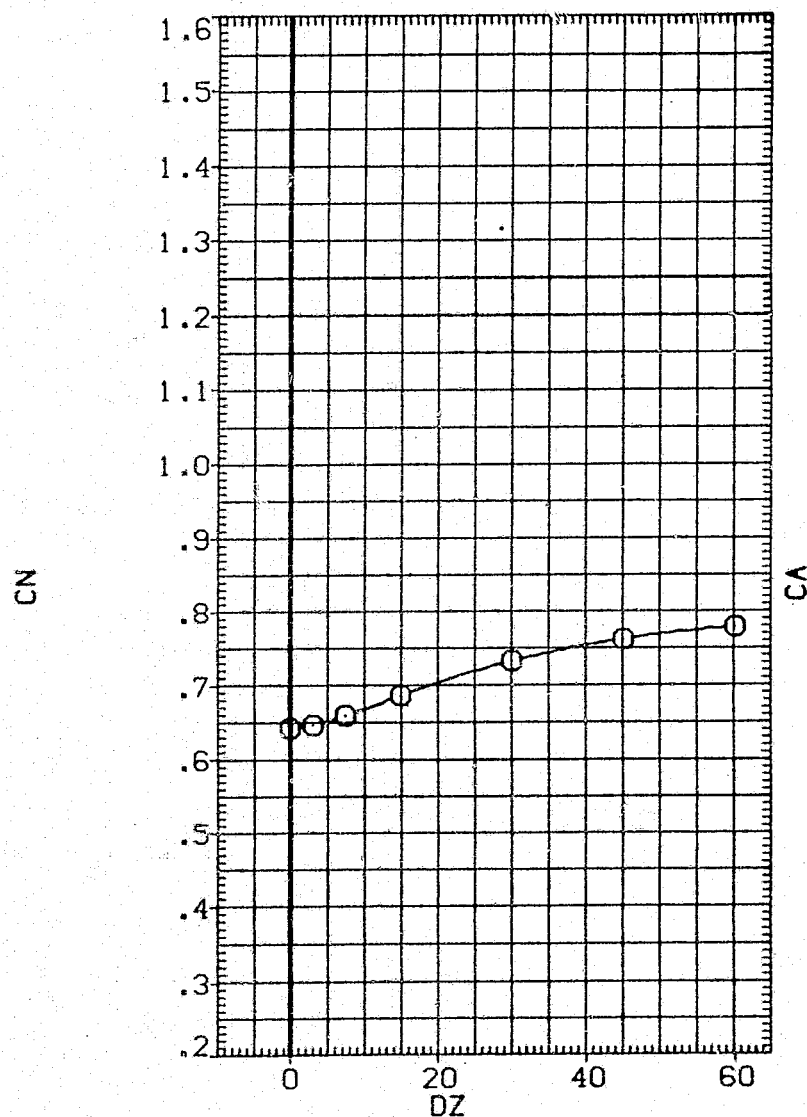


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOB1) ○ CA20 747/0 01 S1 AT38 AT39

ORBITER DATA BETAC .000 BETA0 .000 DX .000

DY .000
REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

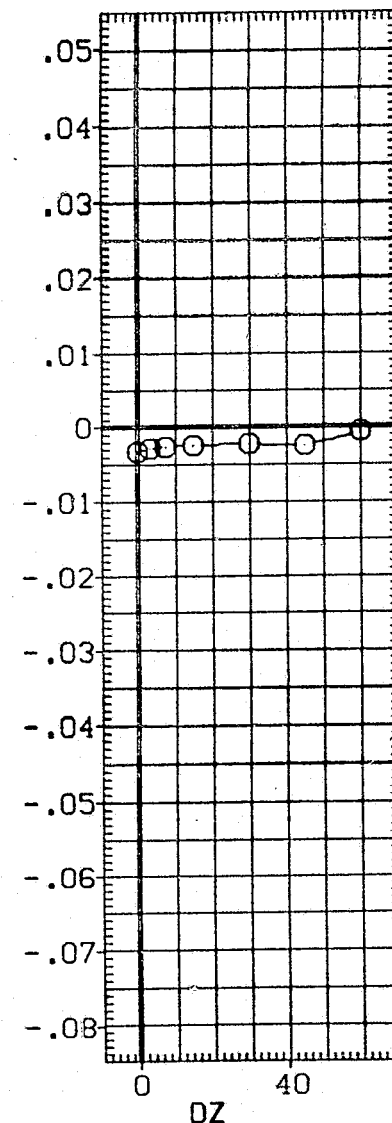
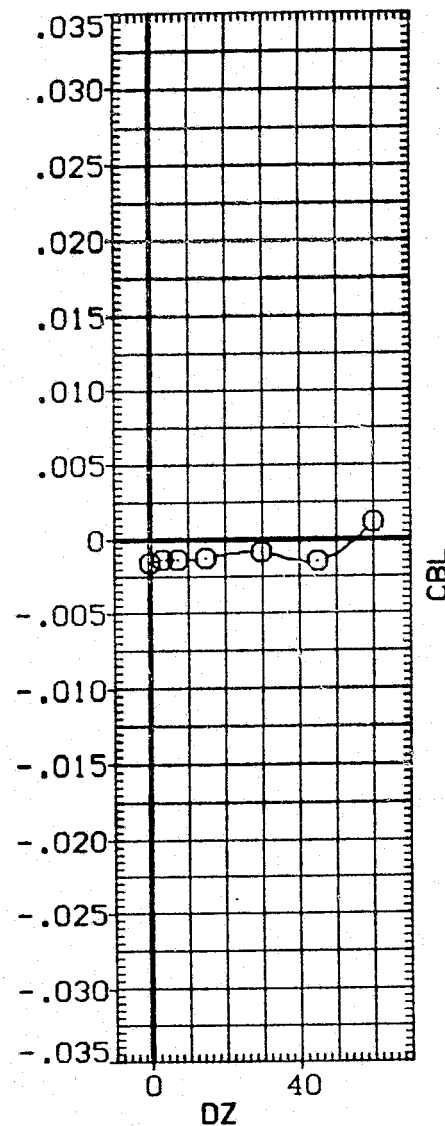
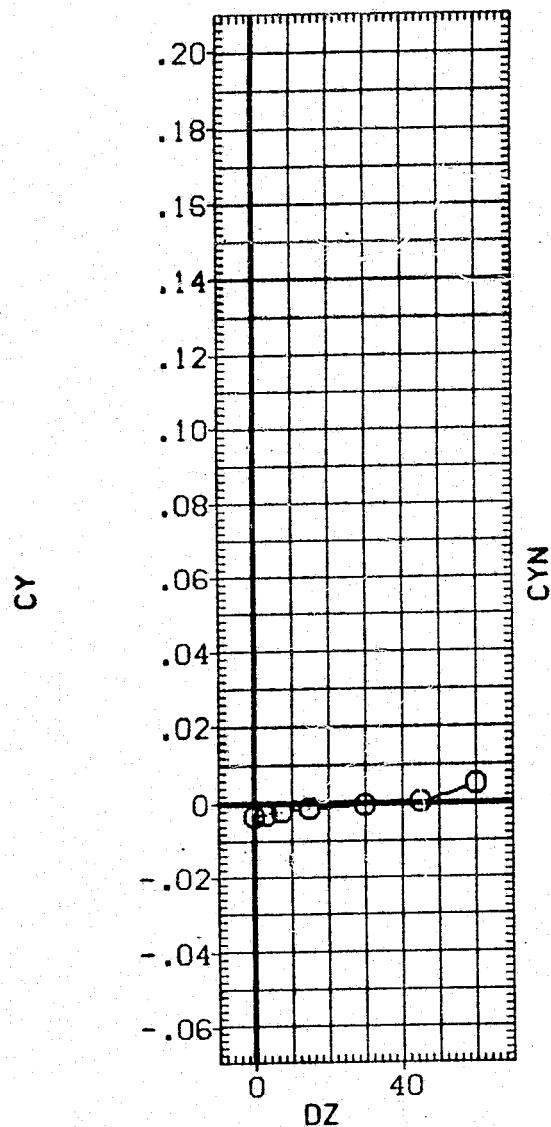


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) ALPHA0= 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGN081) O CA20 747/0 01 S1 AT38 AT39

ORBITER DATA

BETAC .000
BETA0 .000
DX .000

DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

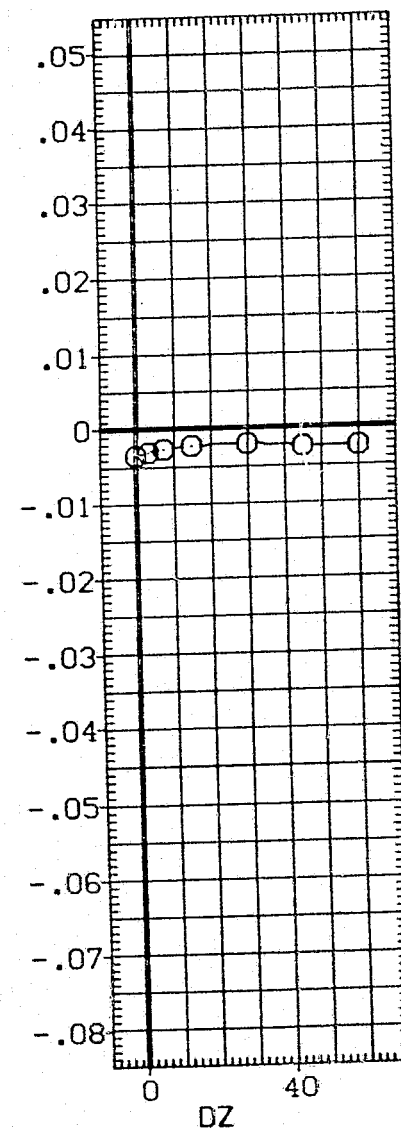
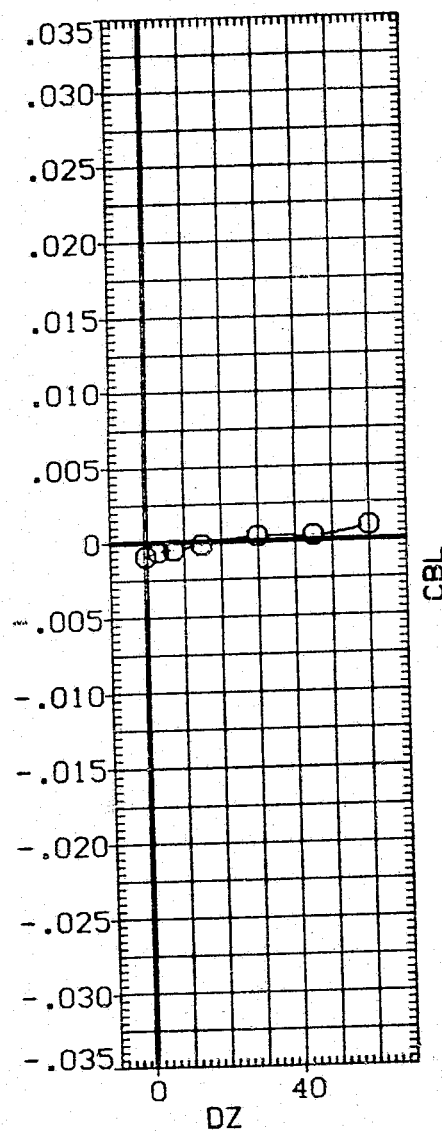
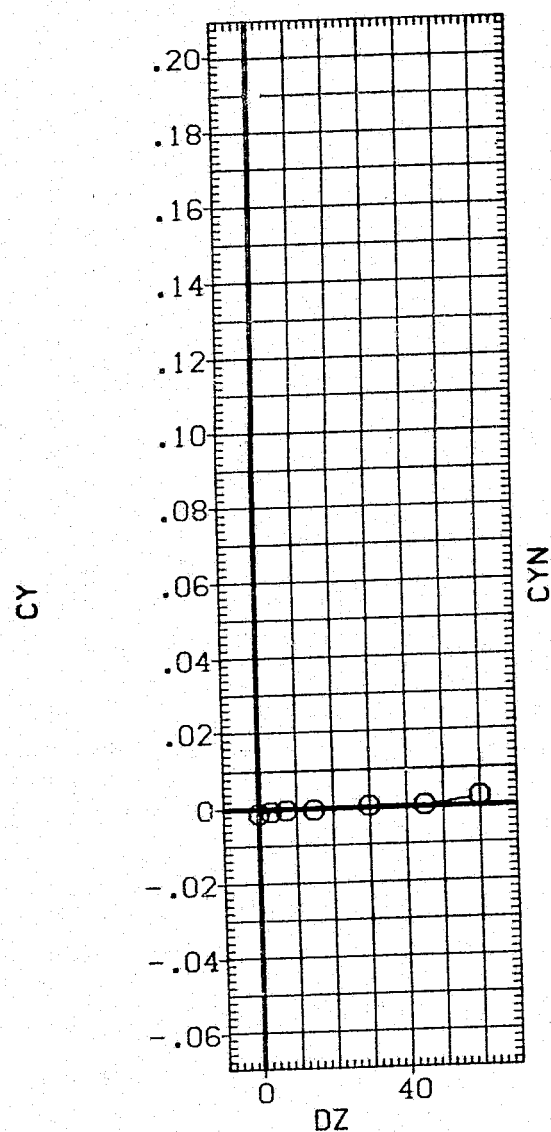


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B)ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOB1) ○ CA20 747/0 01 S1 AT38 AT39

ORBITER DATA BETAC BETAO DX DY
 .000 .000 .000 .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

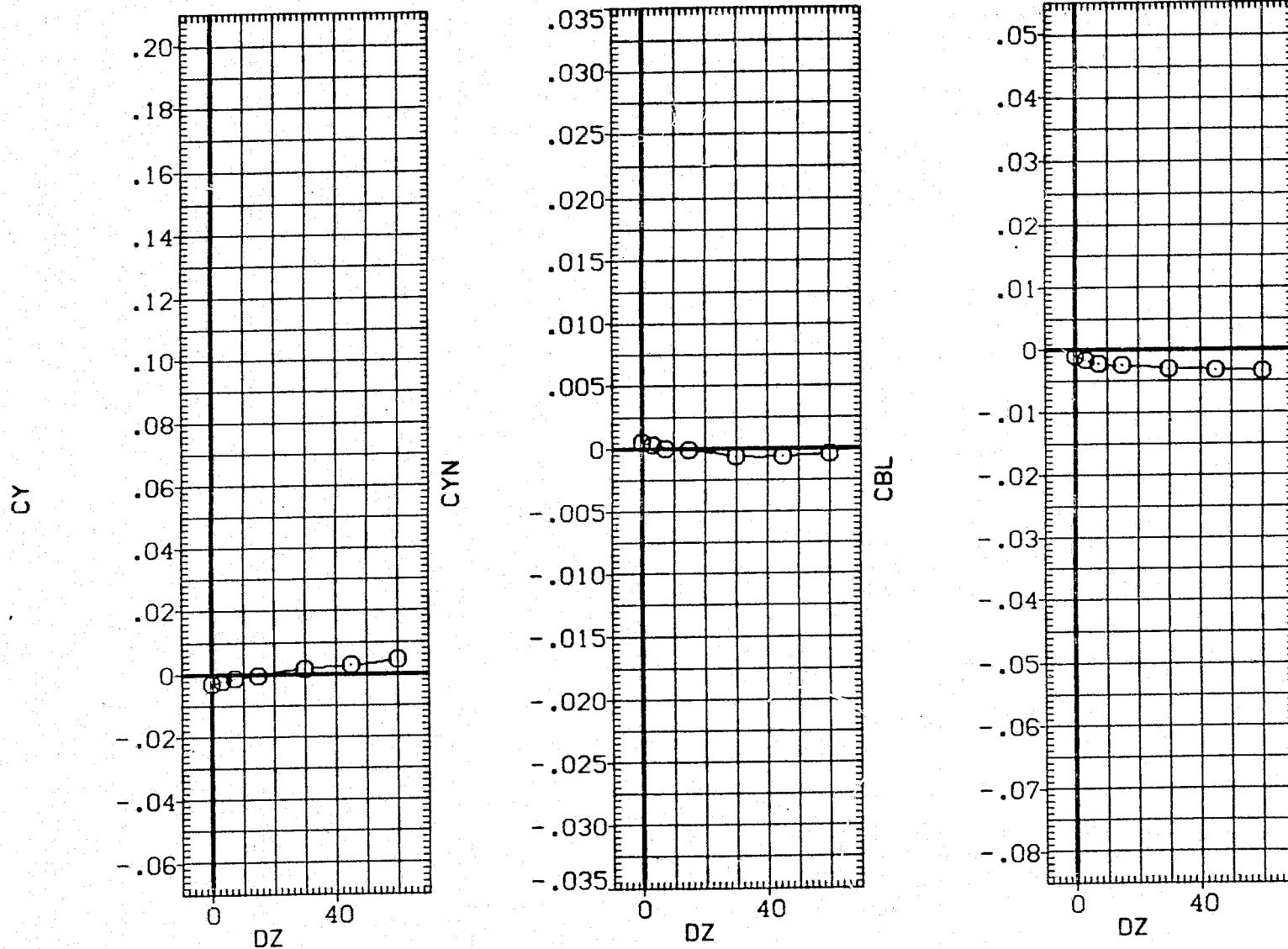


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOB1) ○ CA20 747/B 01 S1 AT38 AT39

ORBITER DATA

BETAC BETAO DX DY
.000 .000 .000 .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

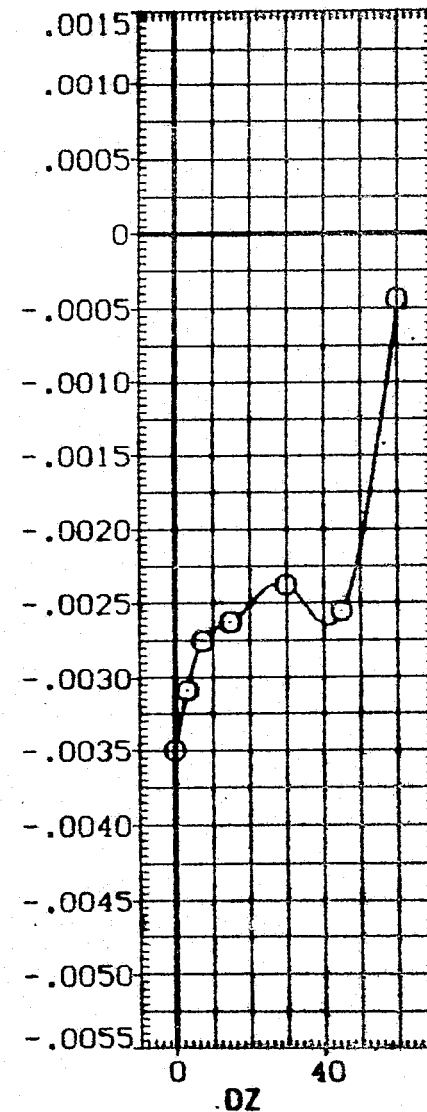
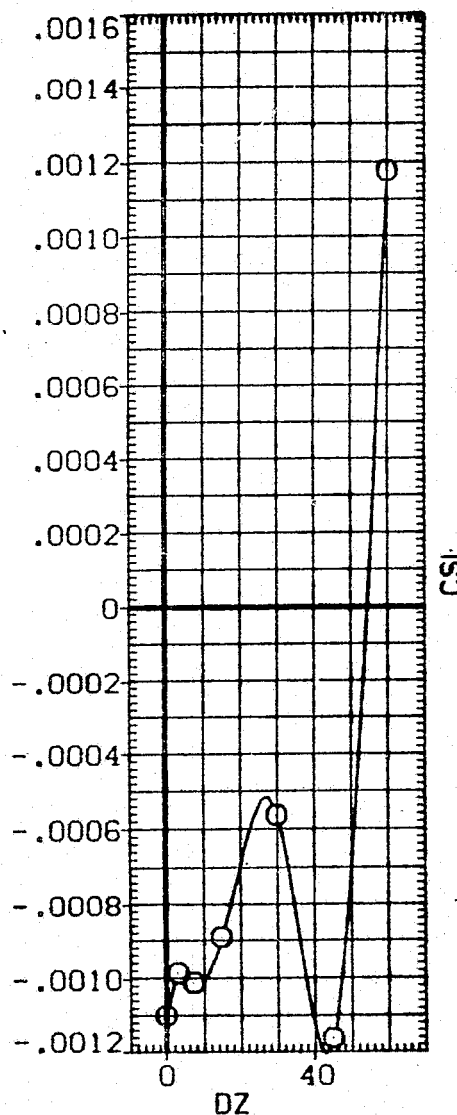
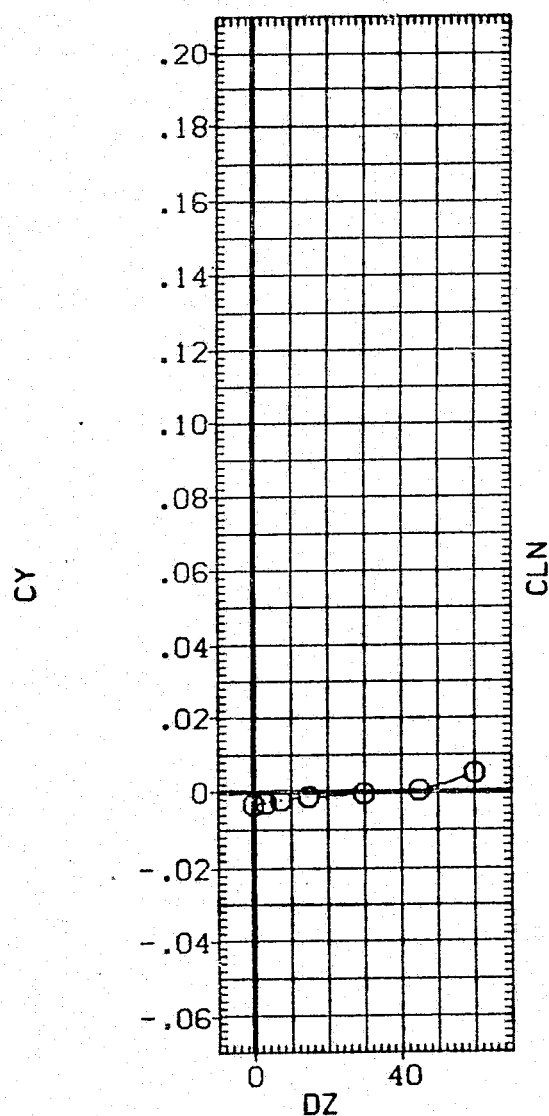


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) ALPHA0 = 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOB1) ○ CA20 747/0 01 S1 AT38 AT39

ORBITER DATA BETAC BETAO DX DY
 .000 .000 .000 .000

REFERENCE INFORMATION
SREF 2690.0000 99.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

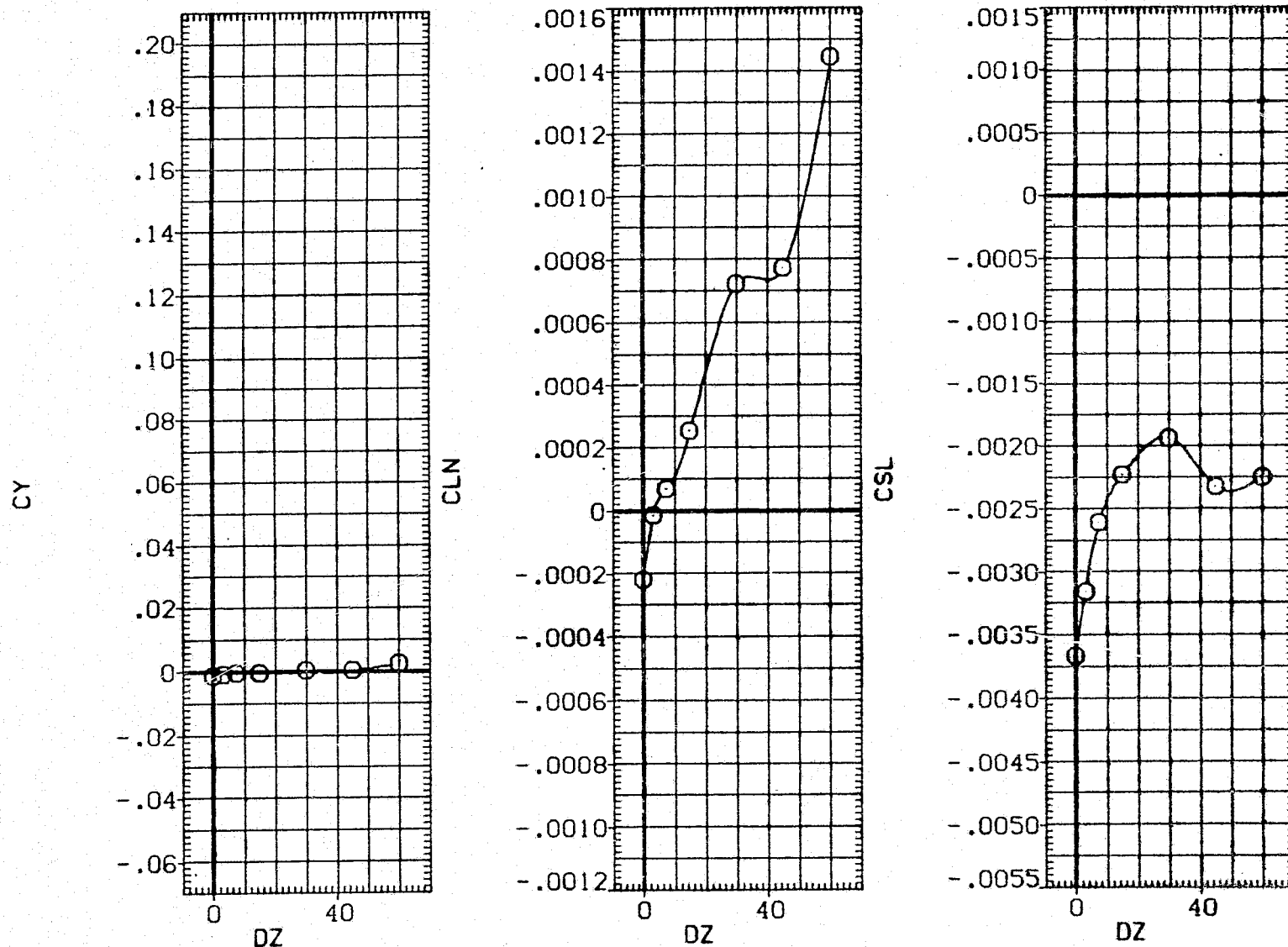


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B)ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(SGNOB1) ○ CA20 747/0 01 S1 AT38 AT39

ORBITER DATA

BETAC .000
BETA0 .000
DX .000

DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 975.0000 IN.Z0
SCALE .0300

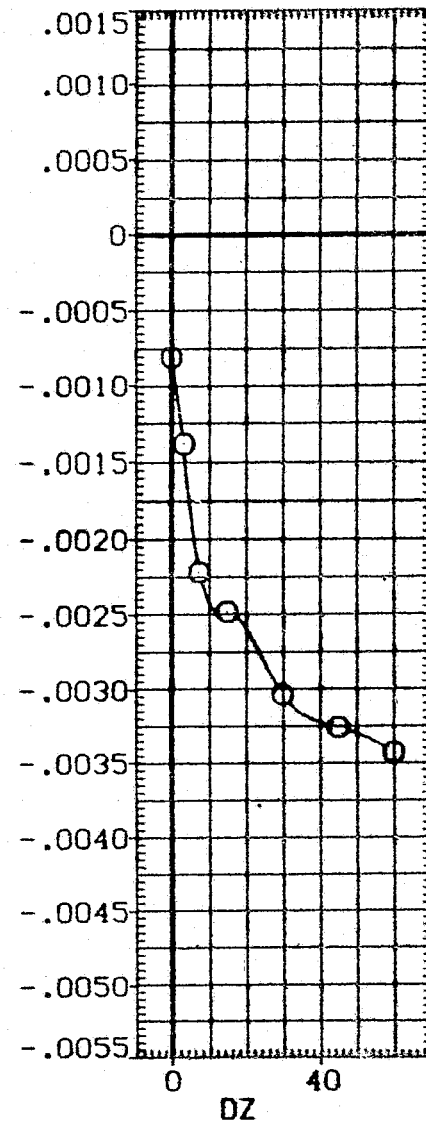
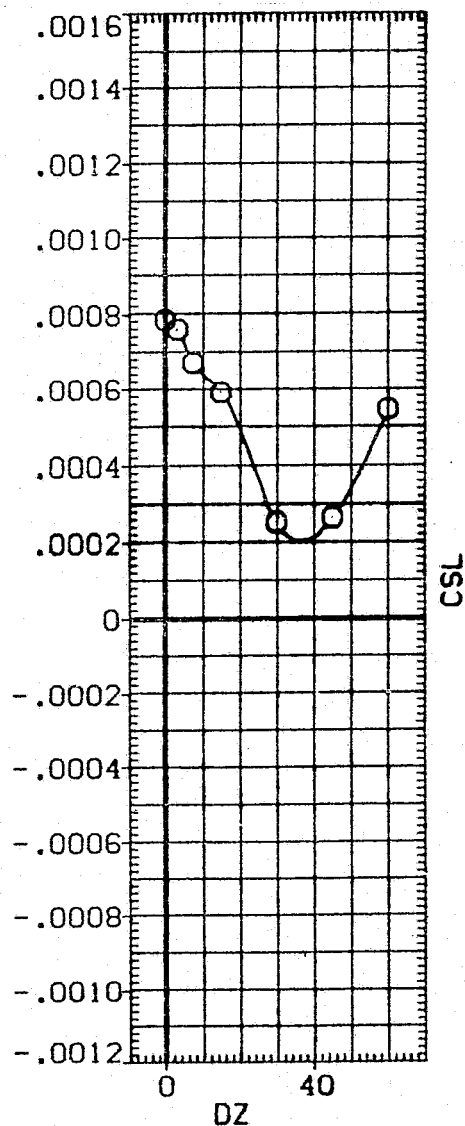
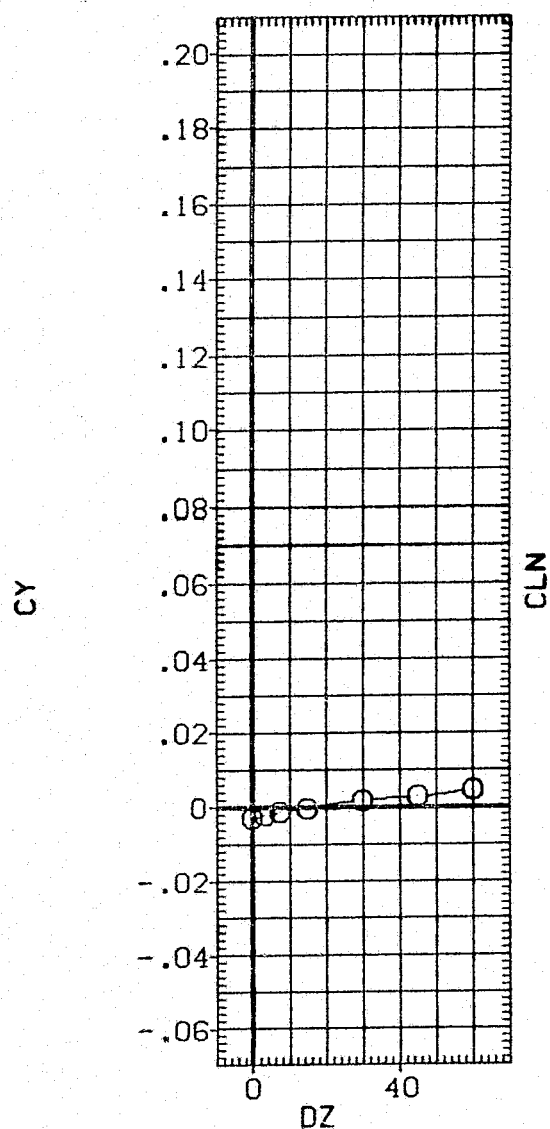


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(C)ALPHA0= 16.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER DATA
(SGNOD1)	CA20 747/0 01 S1 AT38 AT39	ORBITER DATA
(SGNOH1)	CA20 747/1 01 S1 AT38 AT39	ORBITER DATA

IORB	ELEVON	DX	DY	REFERENCE INFORMATION	
8.000	5.000	.000	.000	SREF	2690.0000 SQ.FT.
8.000	5.000	.000	.000	LREF	474.8100 IN.
				BREF	936.6800 IN.
				XMHP	1109.0000 IN.X0
				YMHP	.0000 IN.Y0
				ZHHP	375.0000 IN.Z0
				SCALE	.0300

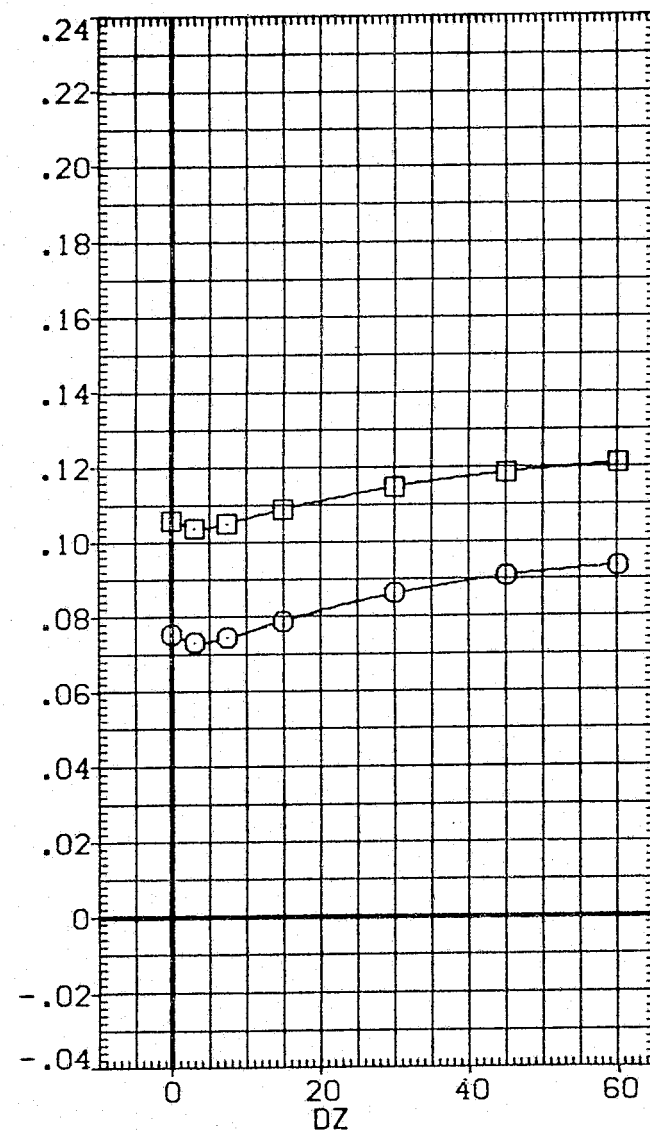
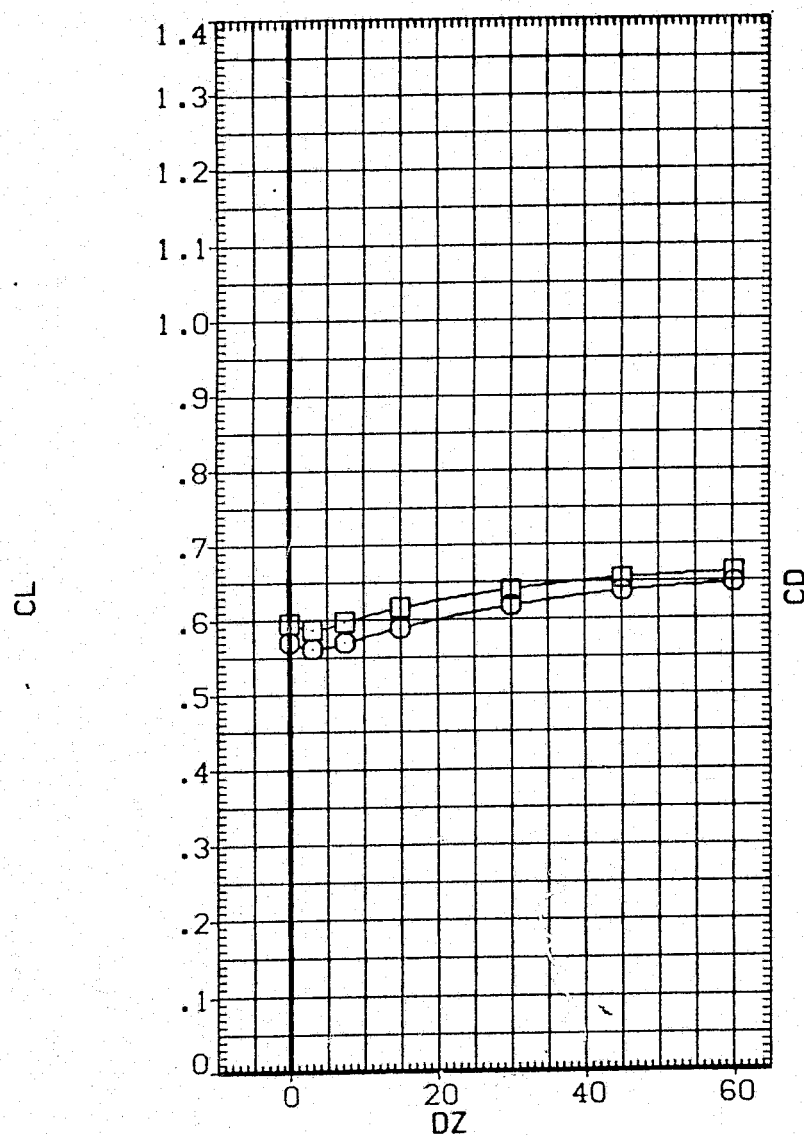


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (A) BETA0 = -5.00

DATA SET SYMBOL		CONFIGURATION DESCRIPTION				ORBITER DATA		IORB	ELEVON	DX	DY	REFERENCE INFORMATION		
(SGNOD1)	□	CA20	747/0	01	S1	AT38	AT39	8.000	5.000	.000	.000	SREF	2690.0000	SQ.FT.
(SGNOH1)	□	CA20	747/1	01	S1	AT38	AT39	8.000	5.000	.000	.000	LREF	474.8100	IN.
												BREF	936.6800	IN.
												XMRP	1109.0000	IN.X0
												YMRP	.0000	IN.Y0
												ZMRP	375.0000	IN.Z0
												SCALE	.0300	

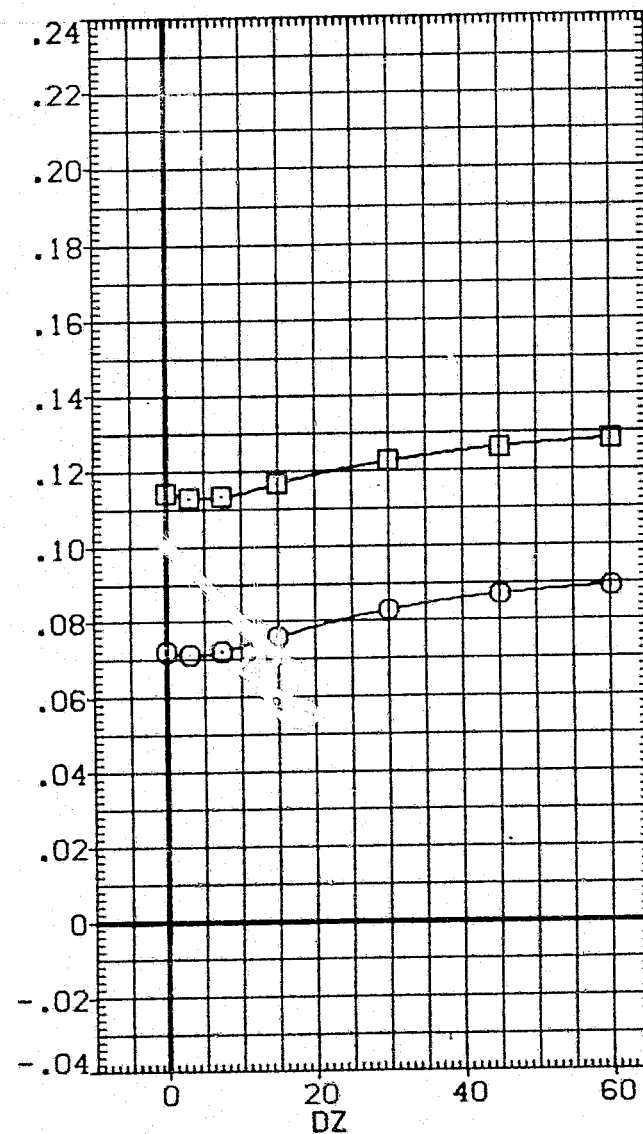
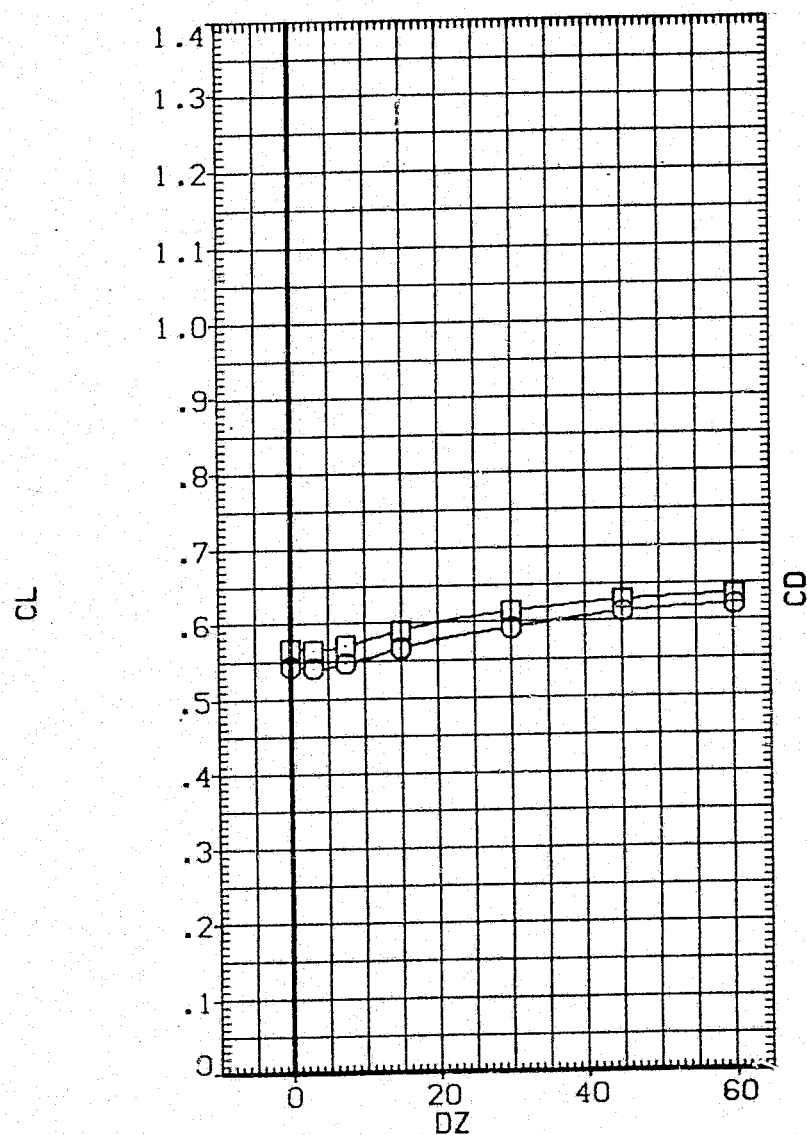


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (B) BETA0 = .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOD1)	CA20 747/0 01 S1 AT38 AT39
(SGNOH1)	CA20 747/1 01 S1 AT38 AT39

	IORB	ELEVON	DX	DY
ORBITER DATA	8.000	5.000	.000	.000
ORBITER DATA	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

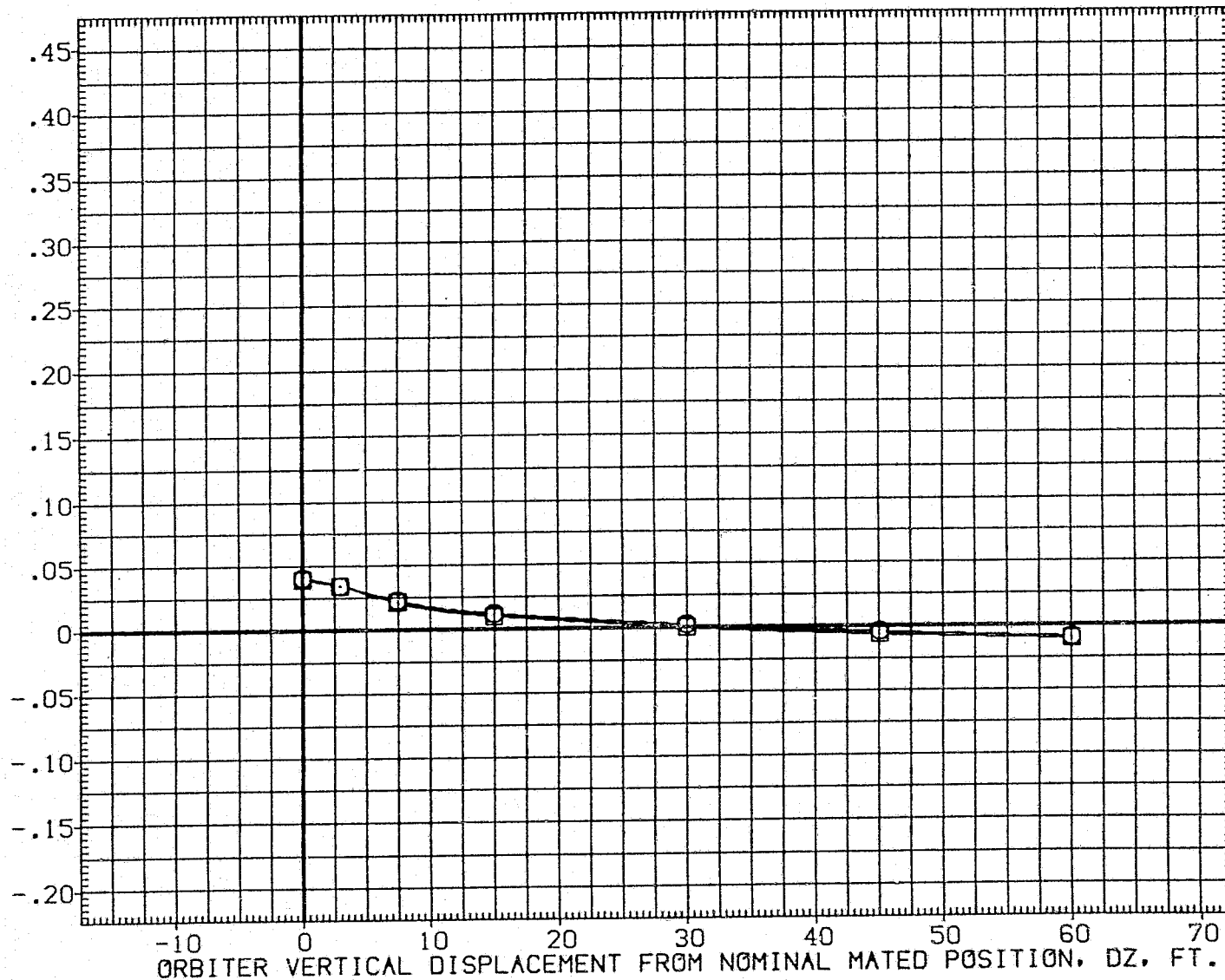


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE

(A) BETA0 = -5.00

DATA SET SYMBOL		CONFIGURATION DESCRIPTION				ORBITER DATA		IORB	ELEVON	DX	DY	REFERENCE INFORMATION		
(SGNOD1)	○	CA20	747/0	01 S1	AT38 AT39	ORBITER DATA	8.000	5.000	.000	.000	SREF	2690.0000	50.FT.	
(SGNOH1)	□	CA20	747/1	01 S1	AT38 AT39	ORBITER DATA	8.000	5.000	.000	.000	LREF	474.8100	IN.	
											BREF	936.6800	IN.	
											XMRP	1109.0300	IN.X0	
											YMRP	.0000	IN.Y0	
											ZMRP	375.0000	IN.Z0	
											SCALE	.0300		

PITCHING MOMENT COEFFICIENT, CLM

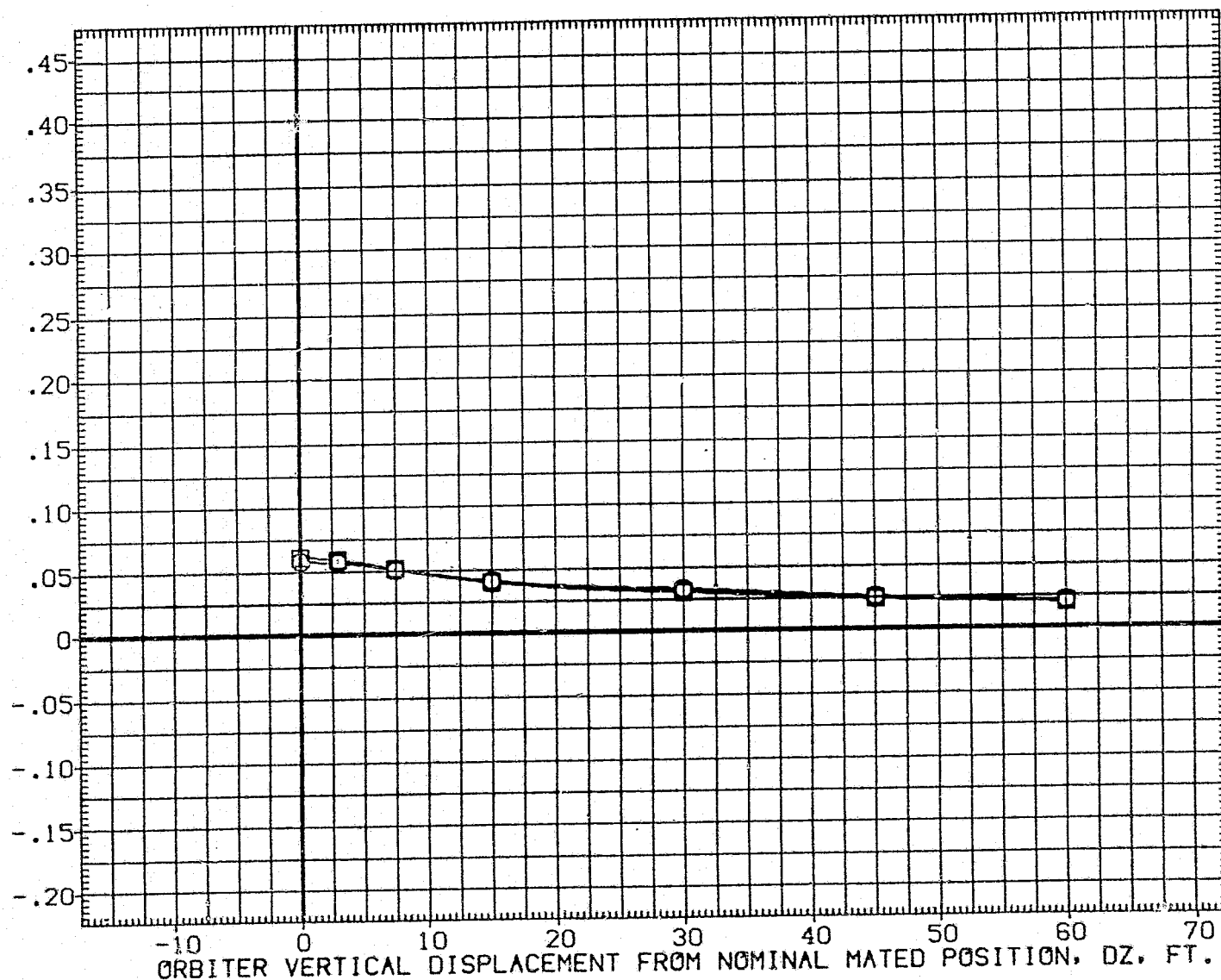


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (B) BETA0 = .00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOD1)	CA20 747/0 01 S1 AT38 AT39
(SGNOH1)	CA20 747/1 01 S1 AT38 AT39

ORBITER DATA
ORBITER DATA

IORB
8.000
8.000

ELEVON
5.000
5.000

DX
.000
.000

DY
.000
.000

REFERENCE INFORMATION	
-----------------------	--

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

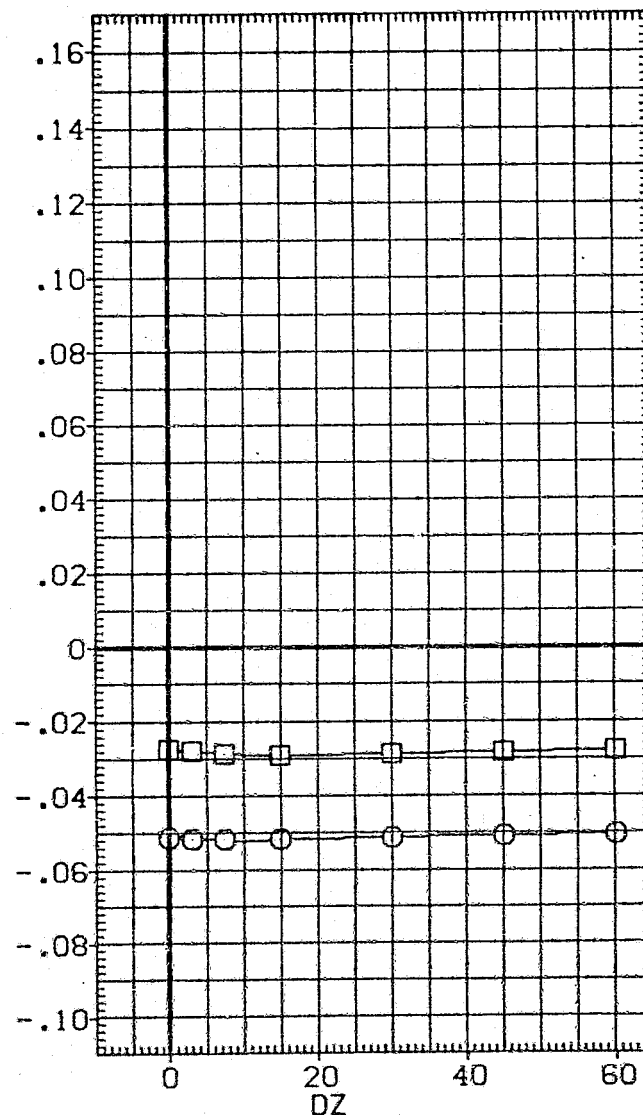
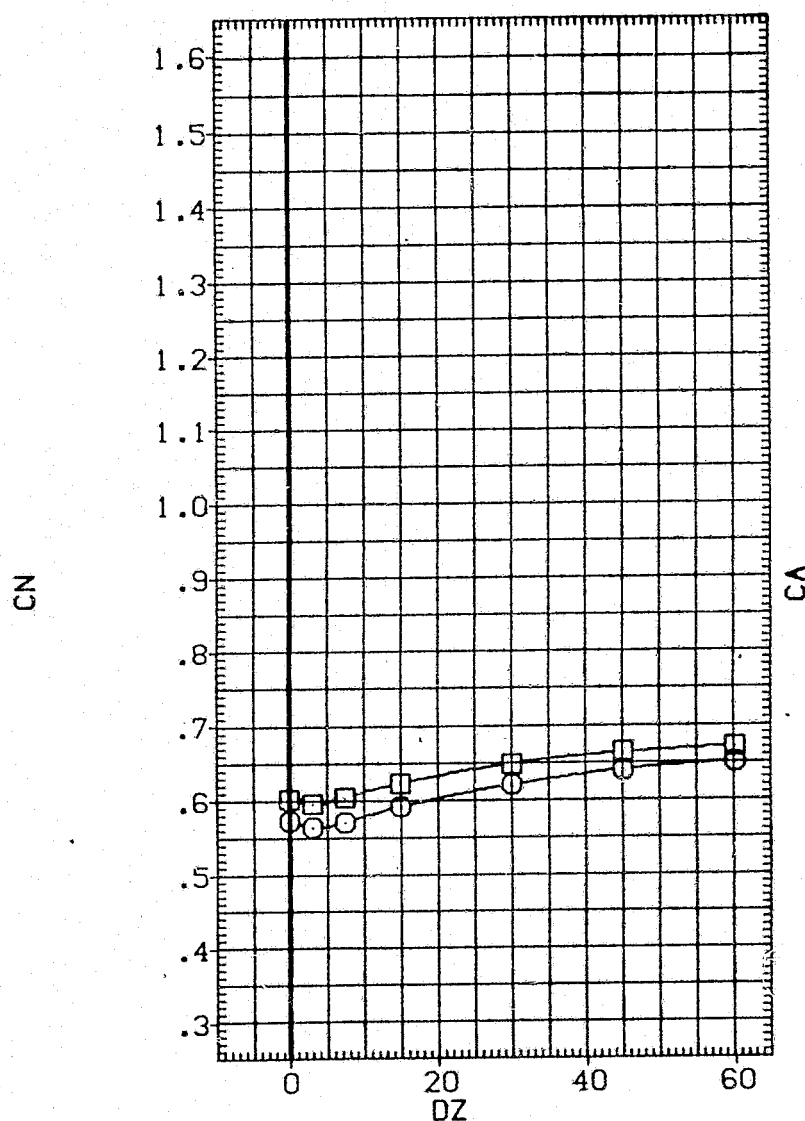




FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (A) BETA0 = -5.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOD1) 	CA20 747/0 01 S1 AT38 AT39
(SGNOH1) 	CA20 747/1 01 S1 AT38 AT39

ORBITER DATA
ORBITER DATA

IORB	ELEVON	DX	DY
8.000	5.000	.000	.000
8.000	5.000	.000	.000

REFERENCE INFORMATION	
SREF	2690.0000 SQ.FT.
LREF	474.8100 IN.
BREF	936.6800 IN.
XMRP	1109.0000 IN.X0
YMRP	.0000 IN.Y0
ZMRP	375.0000 IN.Z0
SCALE	.0300

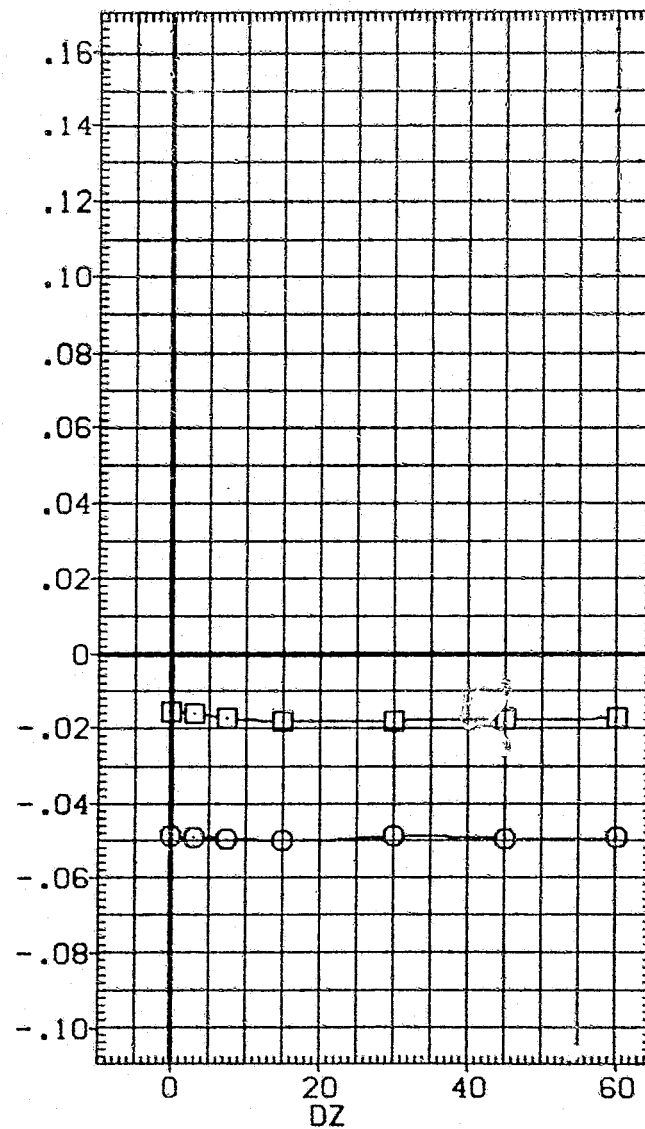
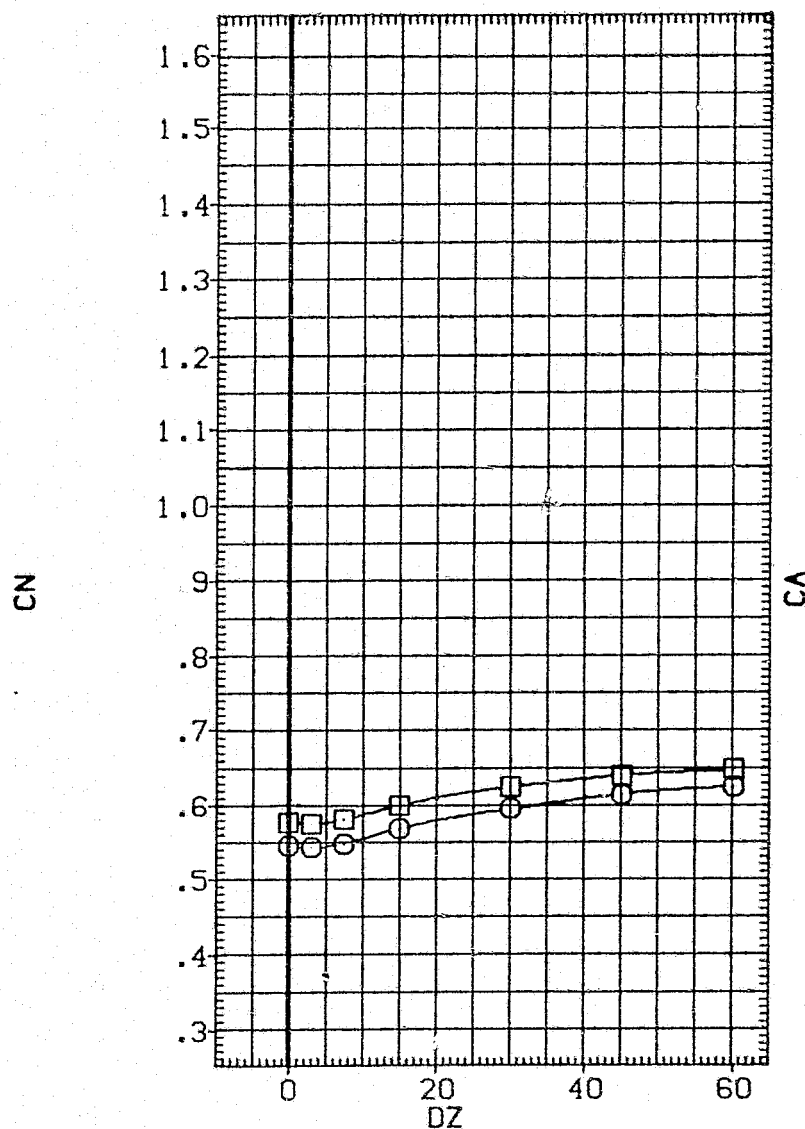




FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE

(B)BETA0 = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOD1)  CA20 747/0 01 S1 AT38 AT39
 (SGNOH1)  CA20 747/1 01 S1 AT38 AT39

ORBITER DATA IORB ELEVON DX DY
 ORBITER DATA 8.000 5.000 .000 .000
 ORBITER DATA 8.000 5.000 .000 .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

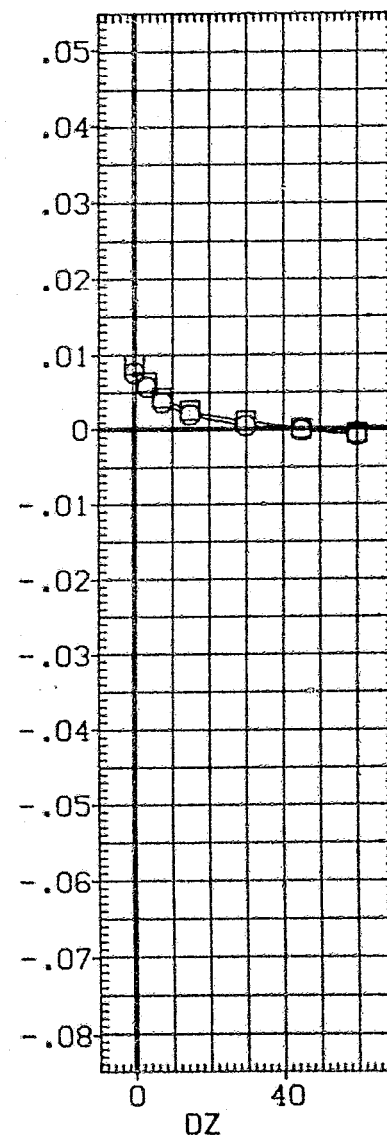
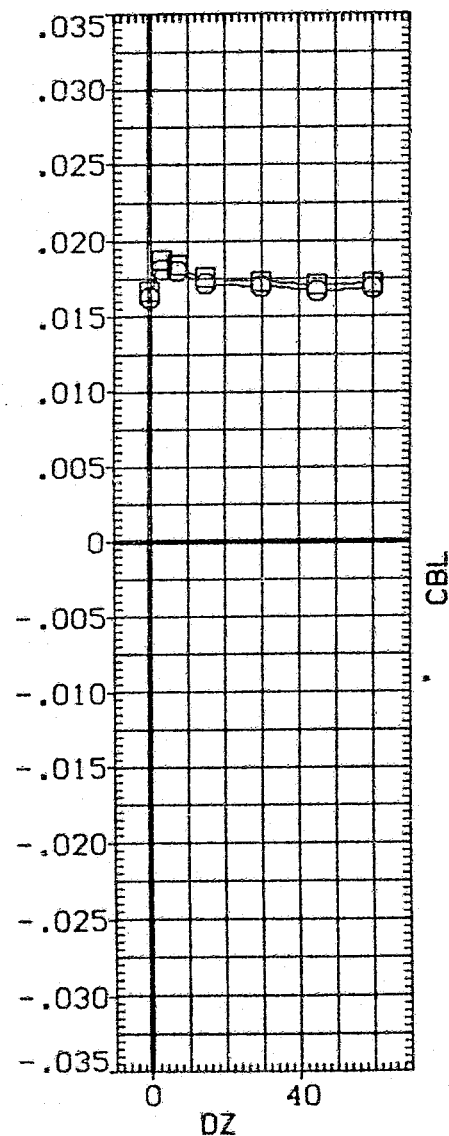
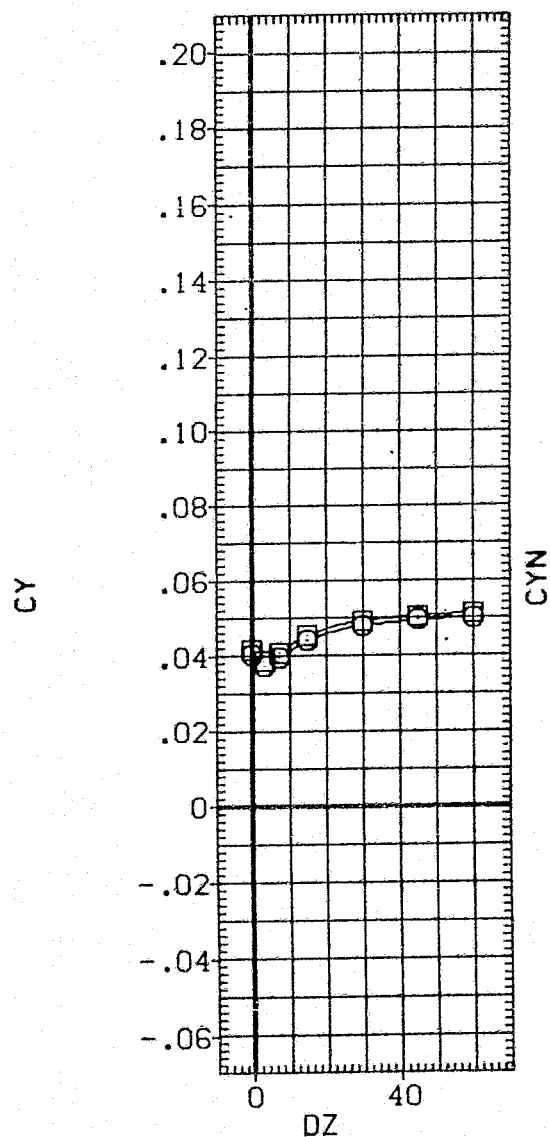


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (A) BETA0 = -5.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOD1)	CA20 747/0 01 S1 AT38 AT39
(SGNOH1)	CA20 747/1 01 S1 AT38 AT39

	ICRB	ELEVON	DX	DY
ORBITER DATA	8.000	5.000	.000	.000
ORBITER DATA	8.000	5.000	.000	.000

REFERENCE INFORMATION		
SREF	2690.0000	SO.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.XG
YMRP	.0000	IN.YO
ZMRP	375.0000	IN.ZO
SCALE	.0300	

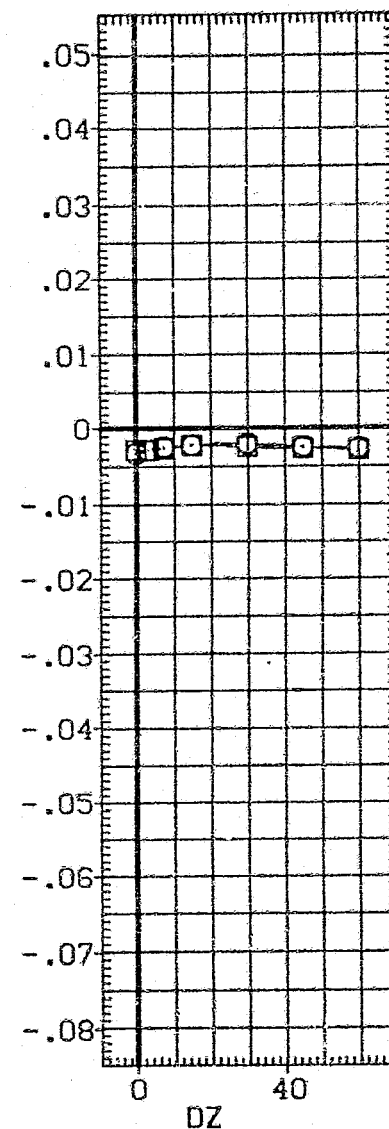
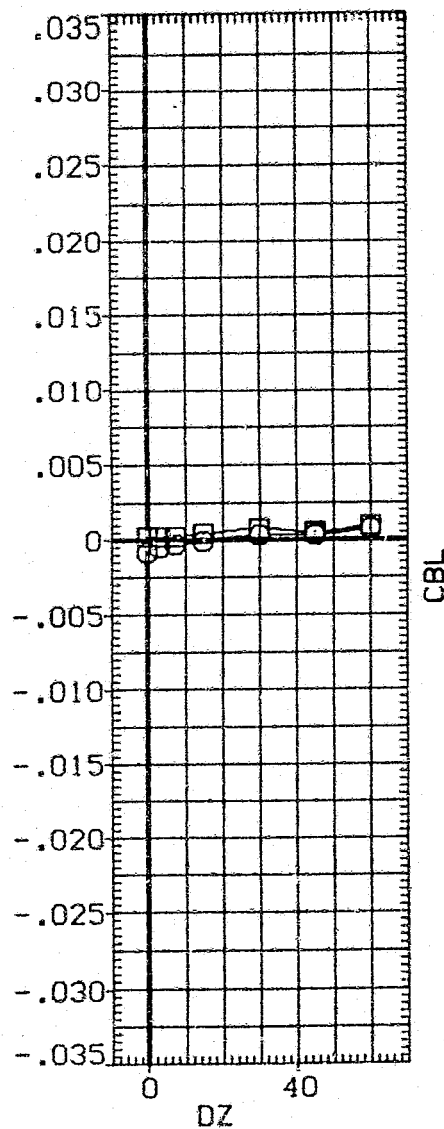
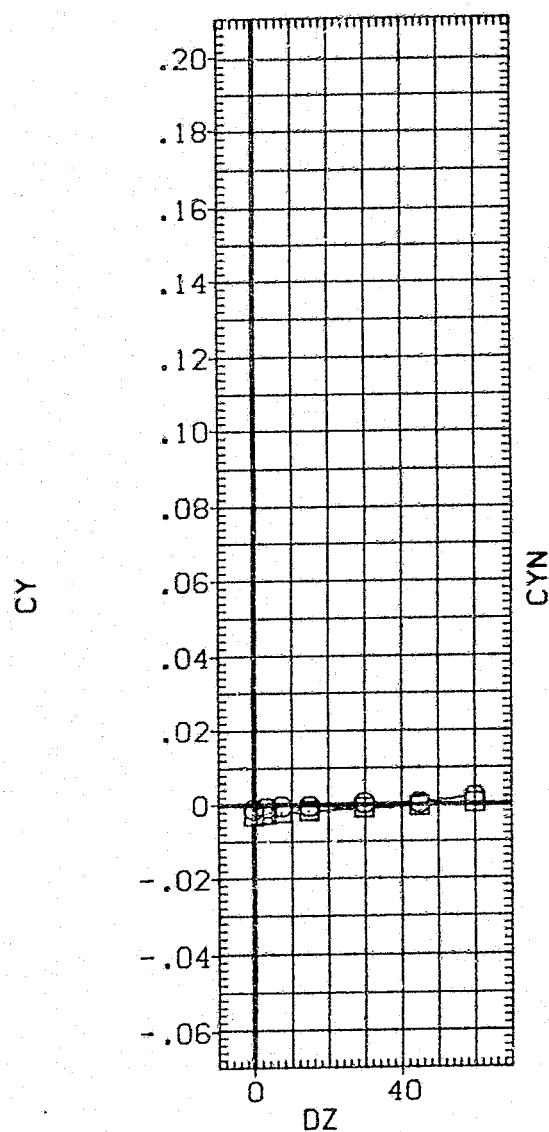


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B) BETA0 = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (SGNOD1) ☐ CA20 747/0 01 S1 AT38 AT39
 (SGNOH1) ☐ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA 10RB 8.000 ELEVON 5.000 DX .000
 ORBITER DATA 8.000 5.000 .000

REFERENCE INFORMATION
 DY .000 SREF 2690.0000 SQ.FT.
 .000 LREF 474.8100 IN.
 BREF 936.6000 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

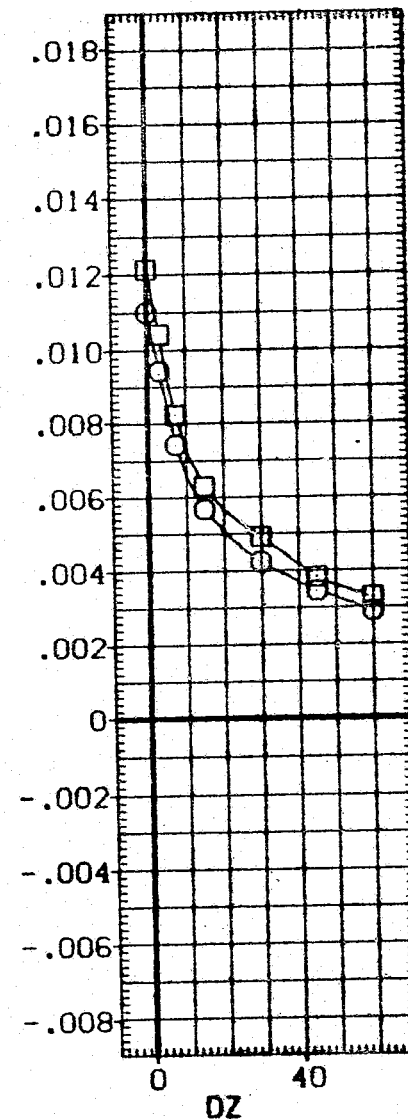
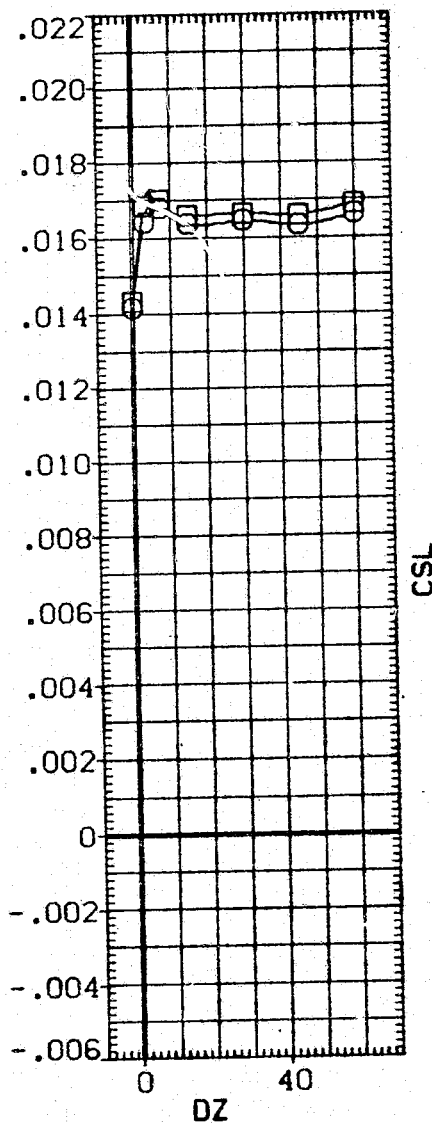
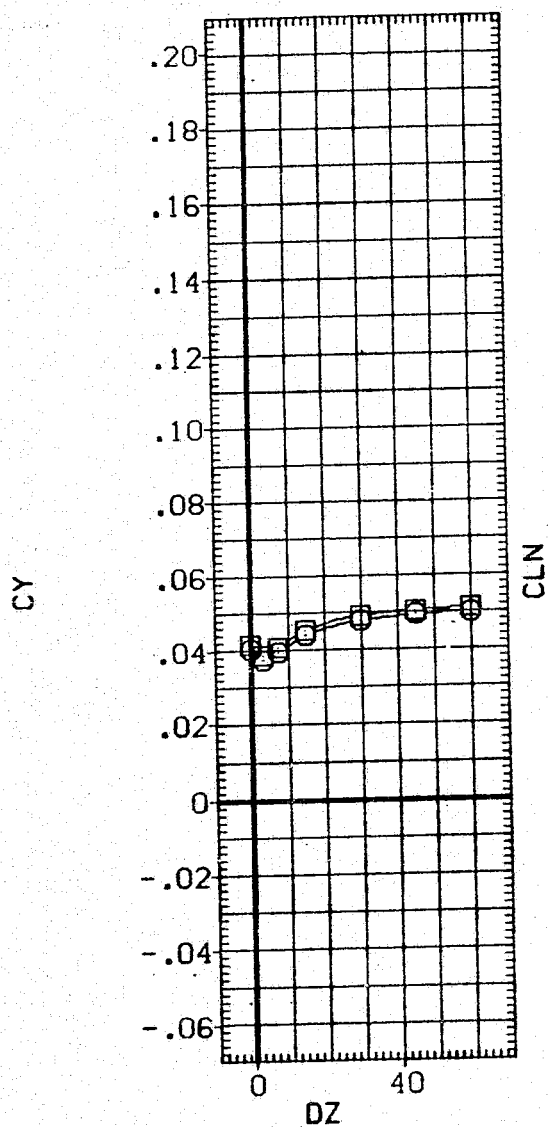


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (A)BETA0 = -5.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(SGNOD1)	CA20 747/0 01 S1 AT38 AT39
(SGNOH1)	CA20 747/1 01 S1 AT38 AT39

ORBITER DATA
8.000
5.000
.000
.000

IORB	ELEVON
8.000	5.000
8.000	5.000

DX	DY
.000	.000
.000	.000

REFERENCE INFORMATION		
SREF	2650.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

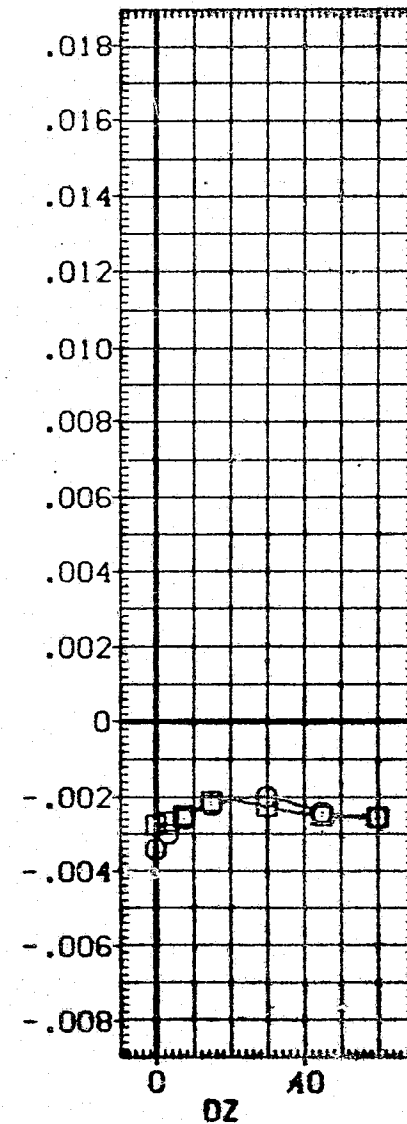
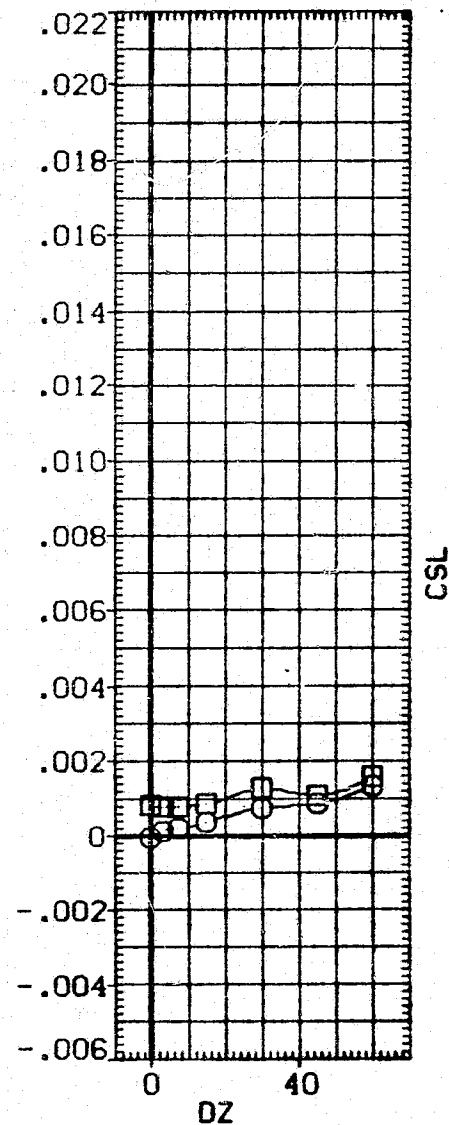
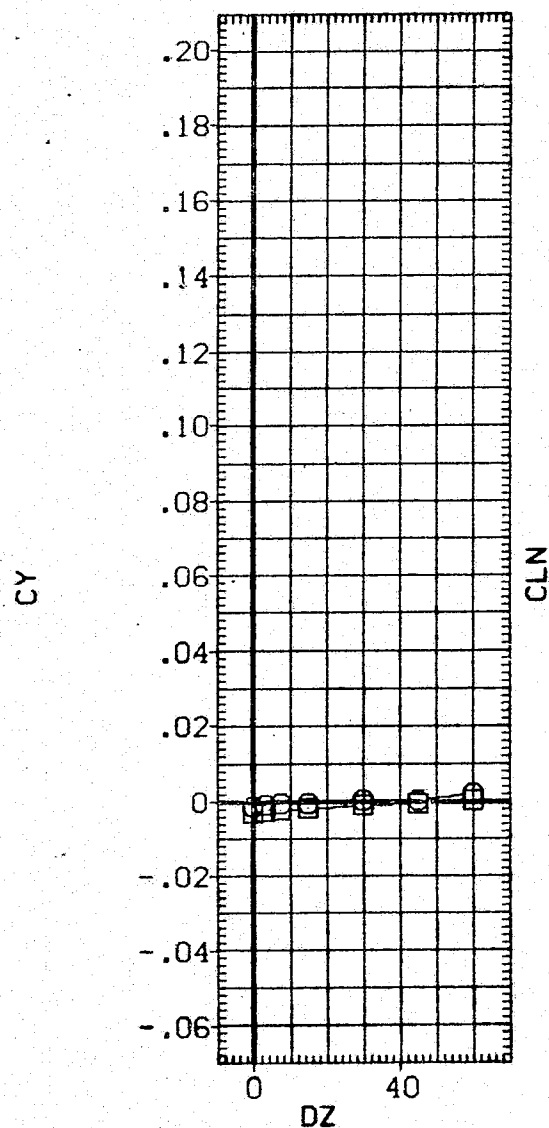


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B) BETA0 = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) ○ CA20 747/1 01 S1 AT38 AT39 ORBITER DATA

REFERENCE INFORMATION		
BETAC	BETA0	DX
.000	.000	.000
DY		
.000		
SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

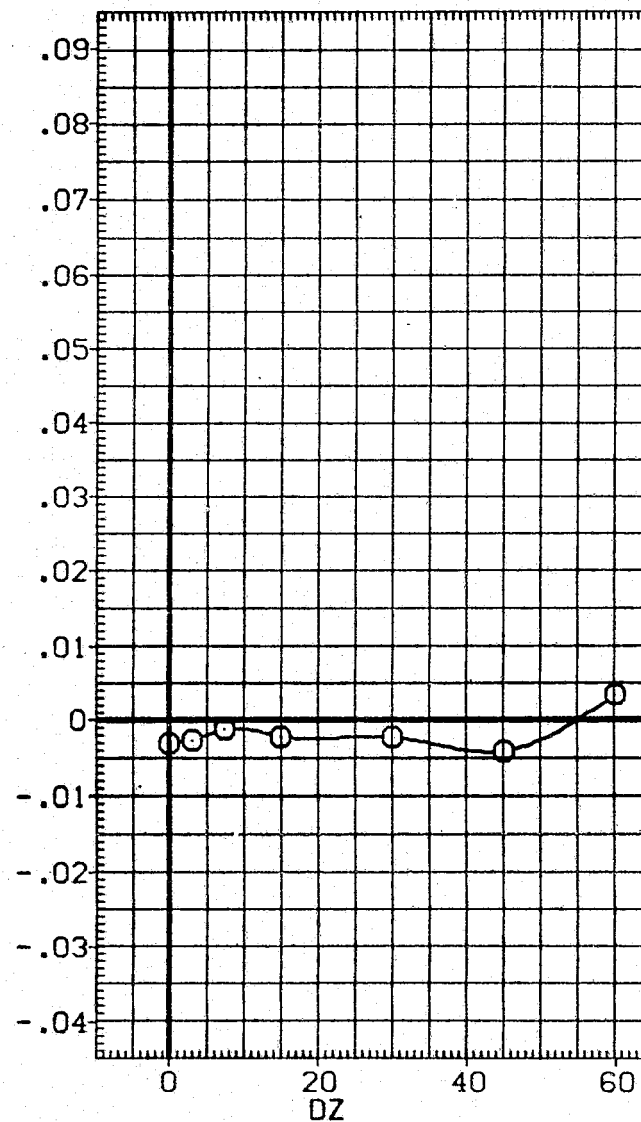
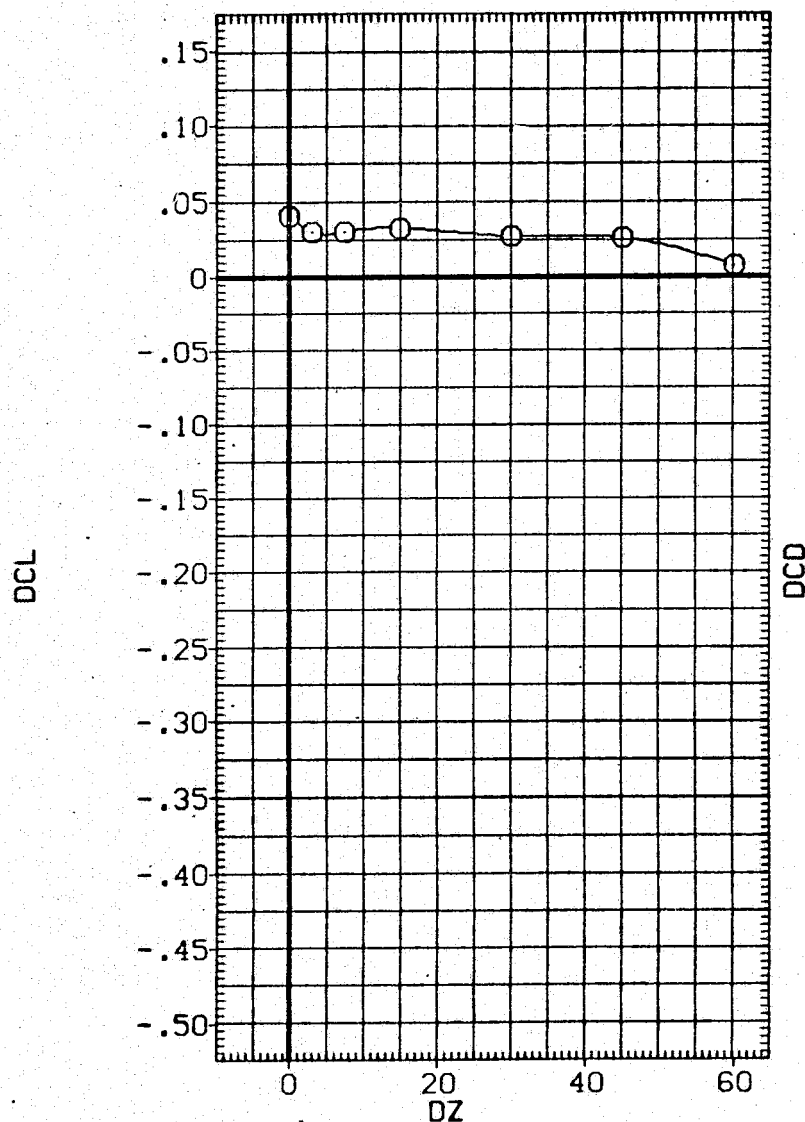


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) ALPHA0= 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (XGNBCA) ○ CA20 747/1 01 SL AT38 AT39 ORBITER DATA

BETAC .000 BETA0 .000 DX .000 DY .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

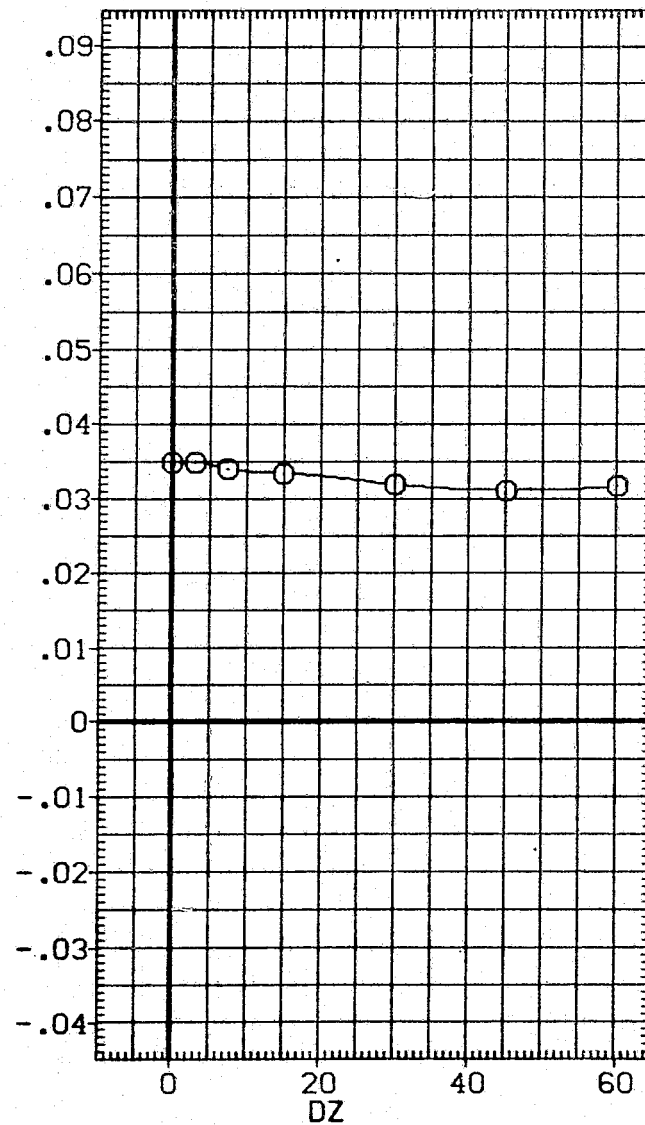
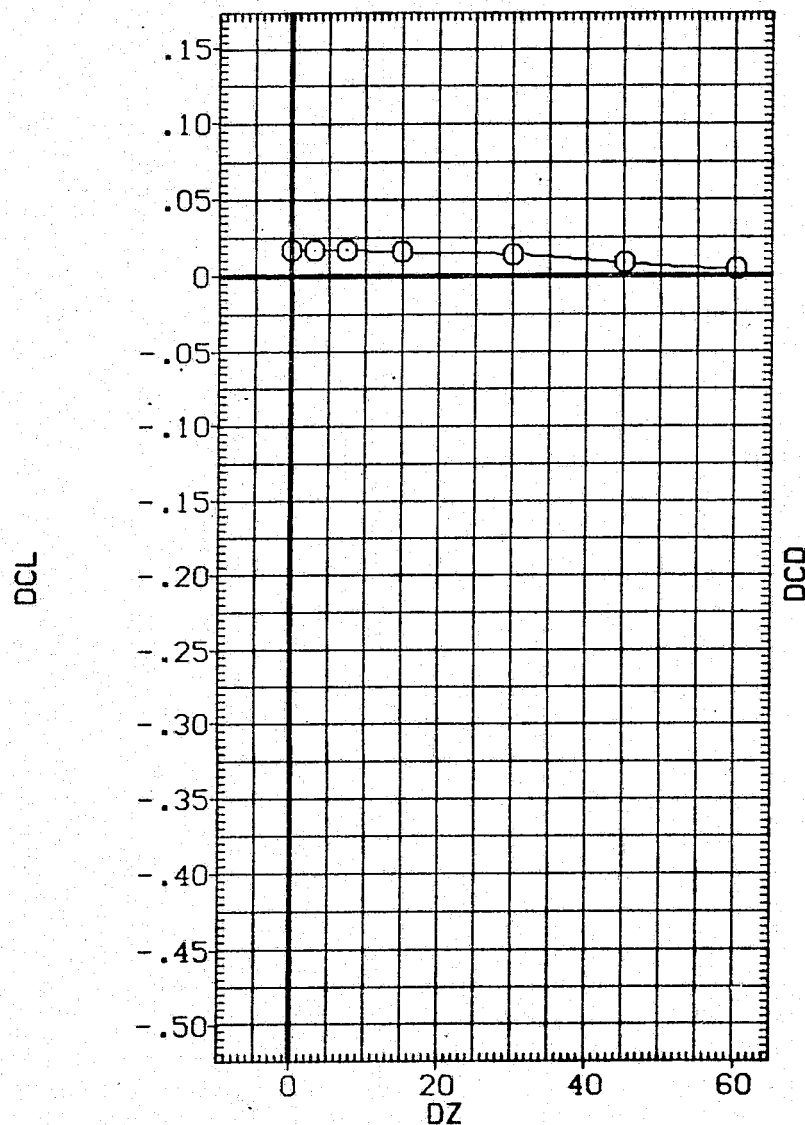


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (B) ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (XGNBCA) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

BETAC .000

BETA0 .000

DX .000

DY .000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8100	IN.
BREF	936.6800	IN.
XMRP	1109.0000	IN.X0
YMRP	.0000	IN.Y0
ZMRP	375.0000	IN.Z0
SCALE	.0300	

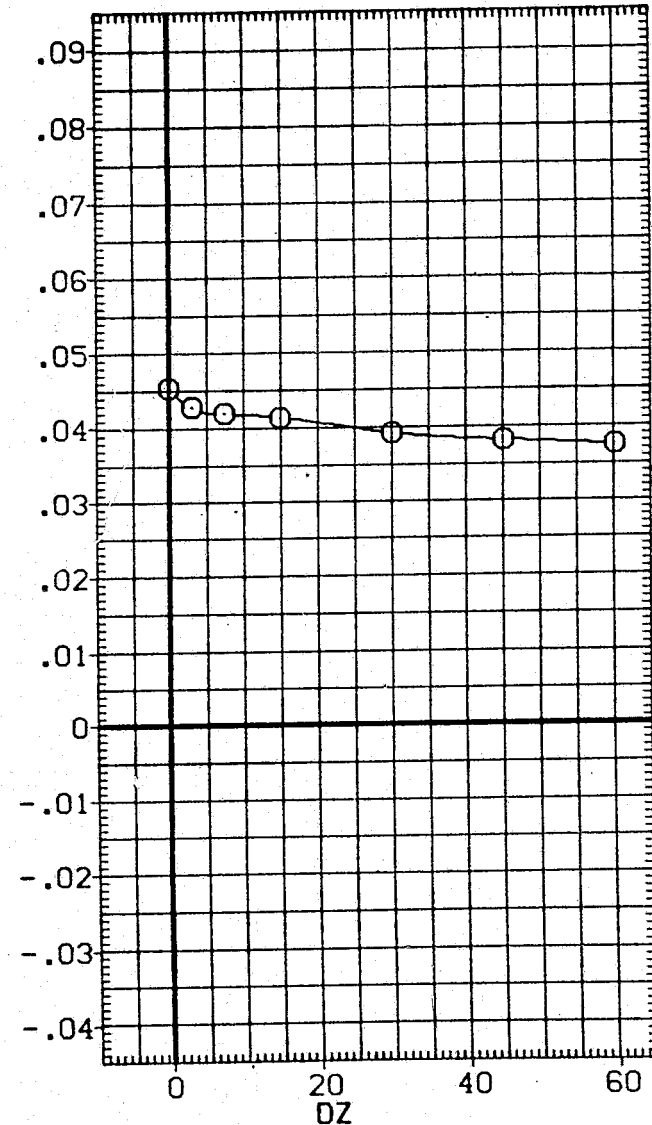
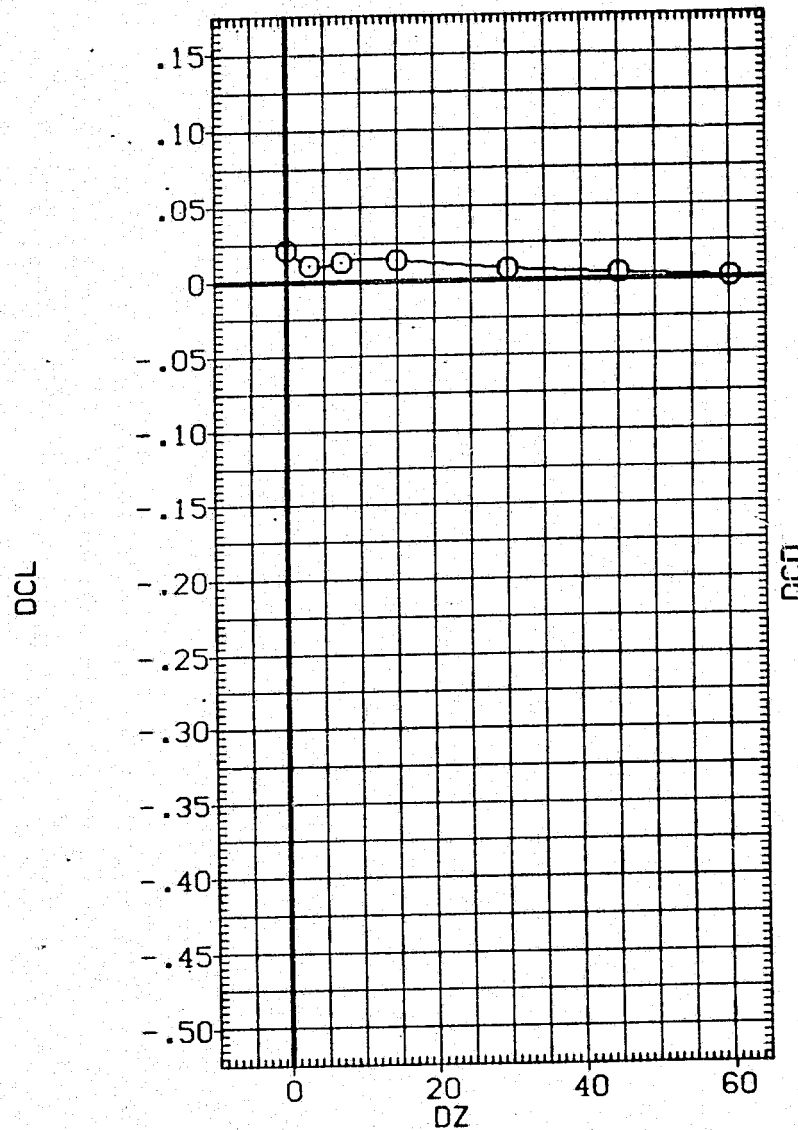


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (XGNBCA) O CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM



FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (A) ALPHA0= 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) O CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

BETAC .000
BETA0 .000
DX .000
DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

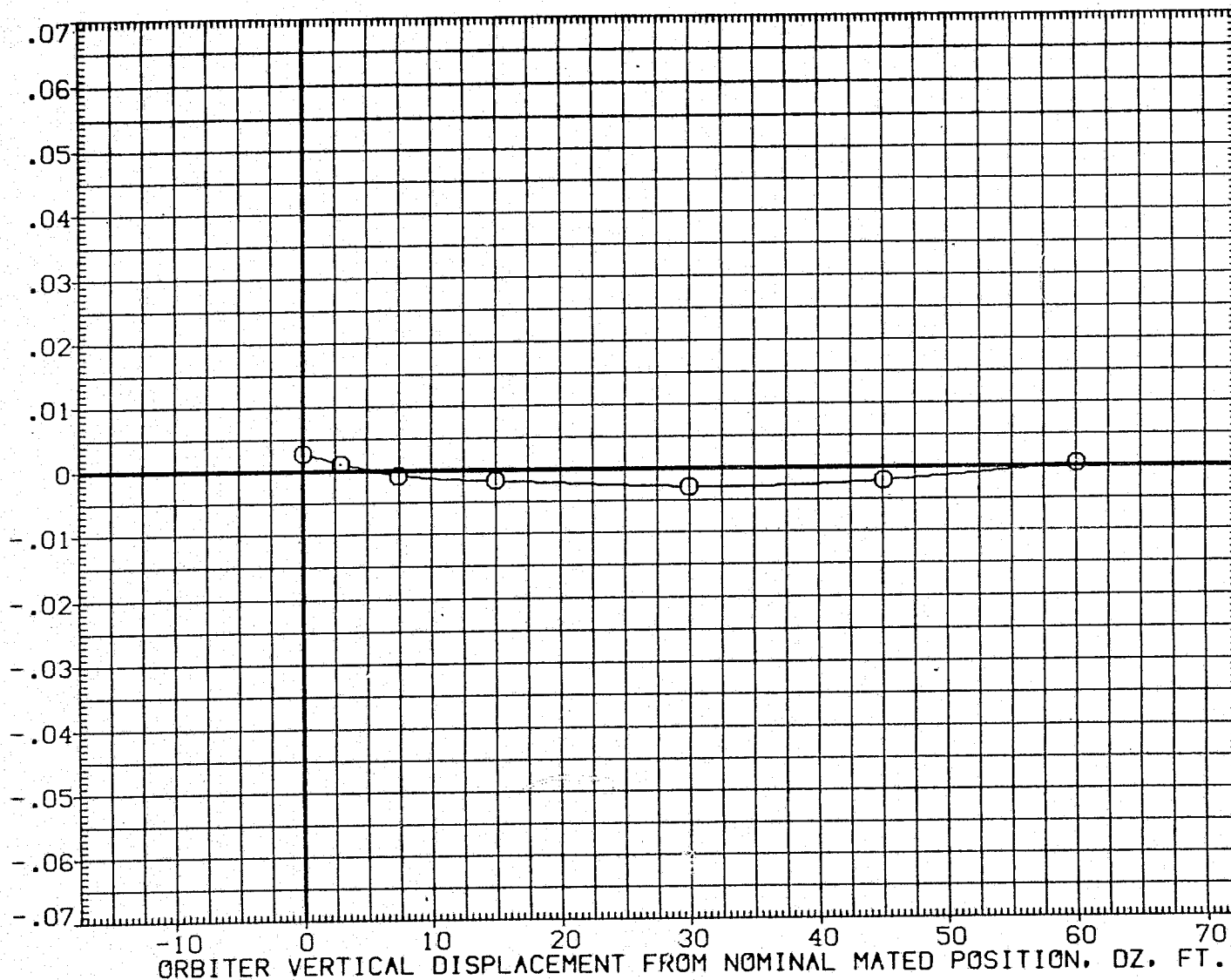


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B) ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) O CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

BETAC .000
BETAO .000
DX .000
DY .000

REFERENCE INFORMATION
SREF 2690.0000 50.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

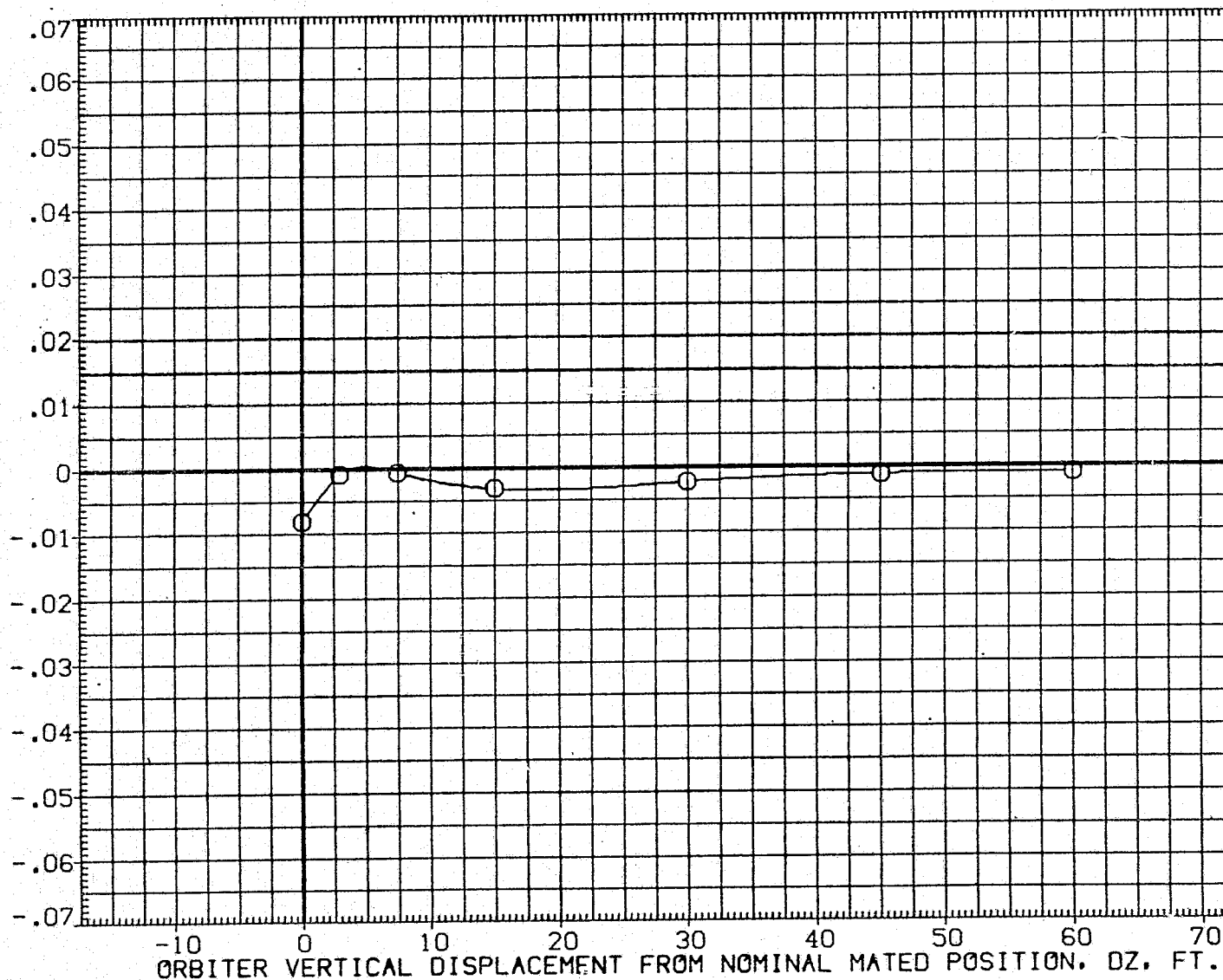


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

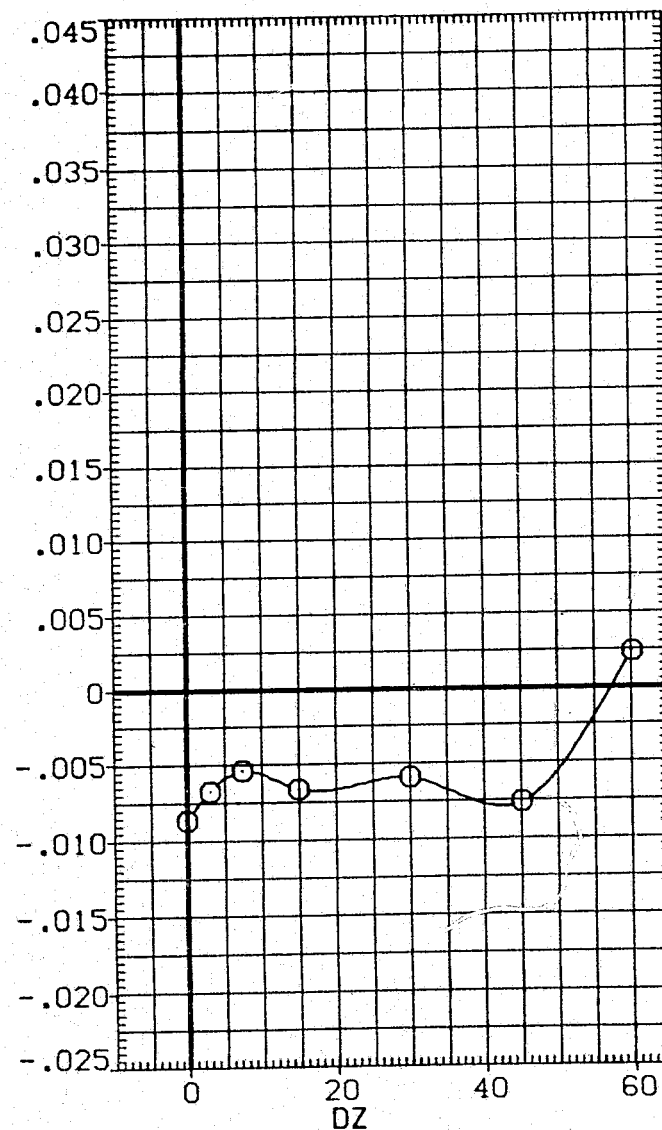
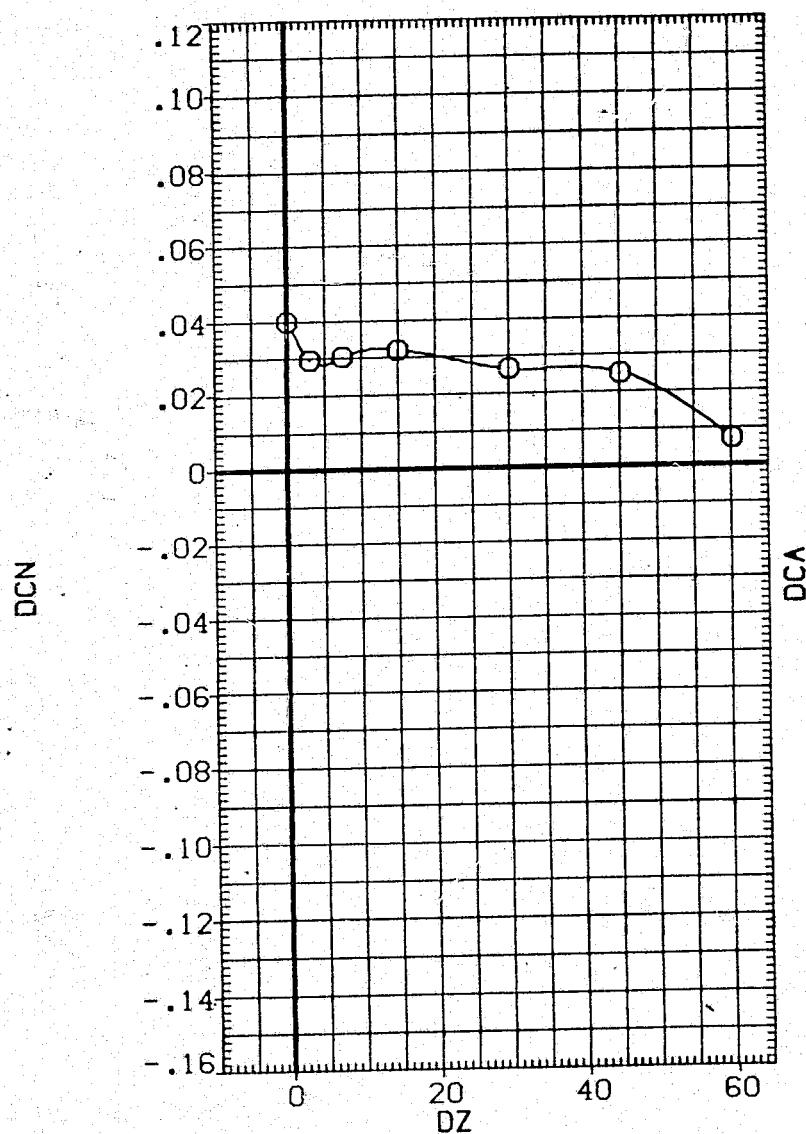


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) ALPHA0 = 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

BETA BETA0 DX DY
.000 .000 .000 .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

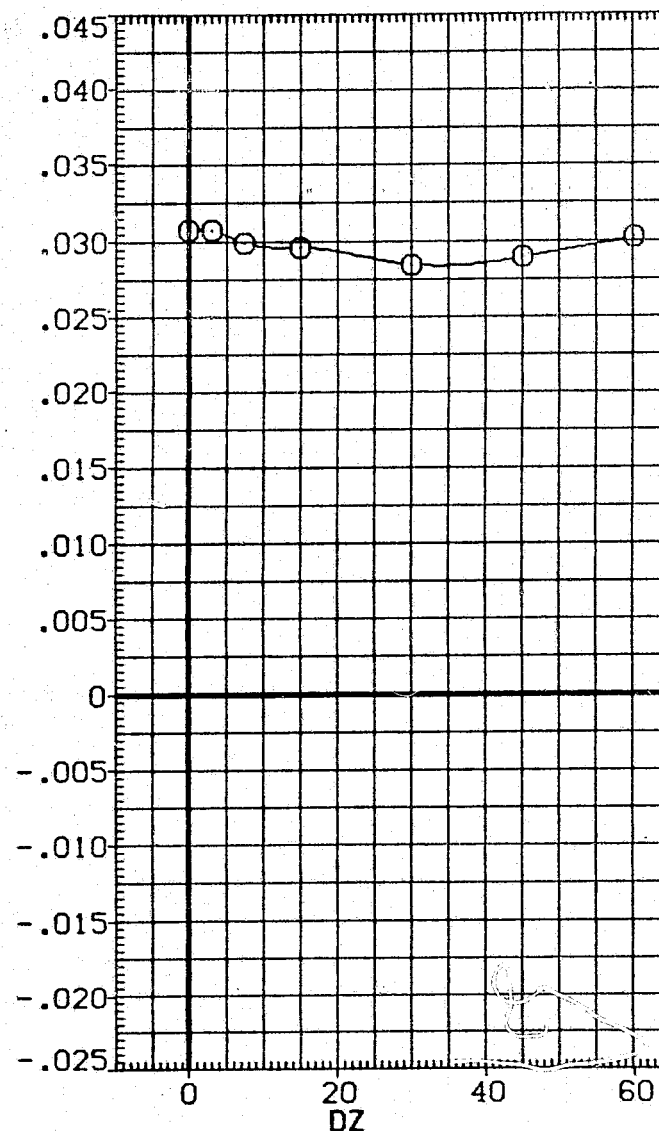
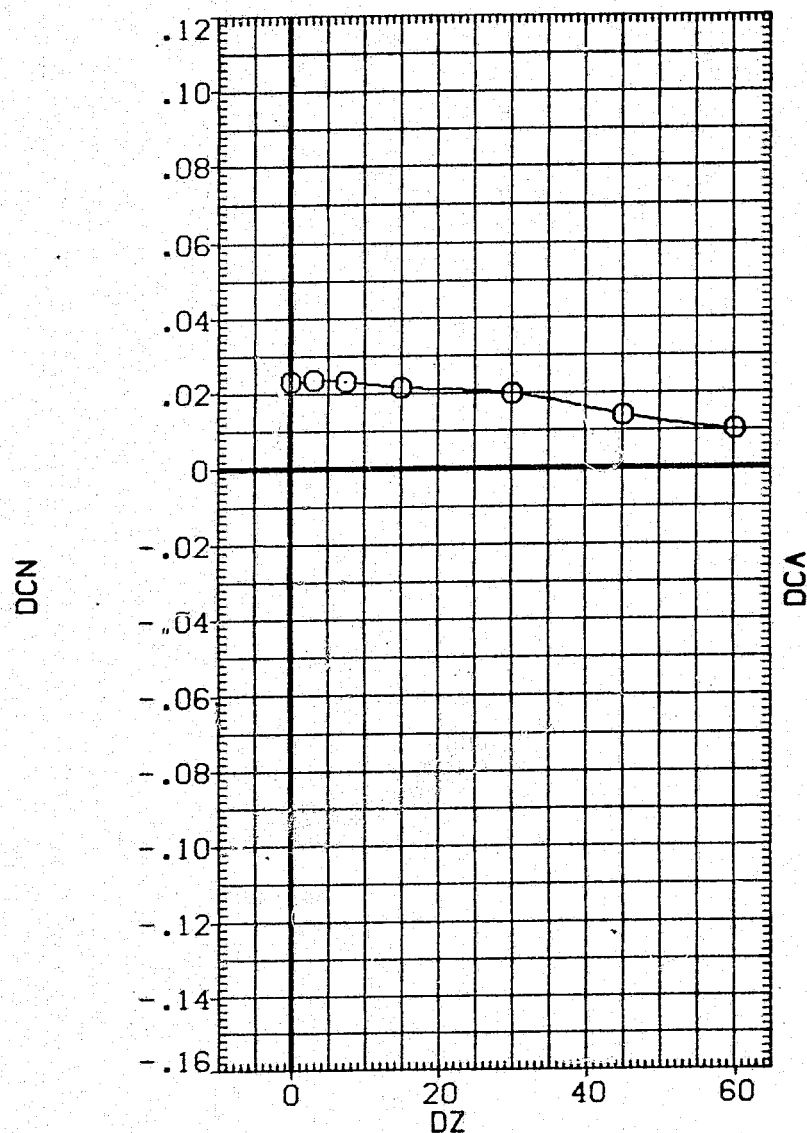


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B) ALPHA0= 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

BETAC .000
BETA0 .000
DX .000
DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

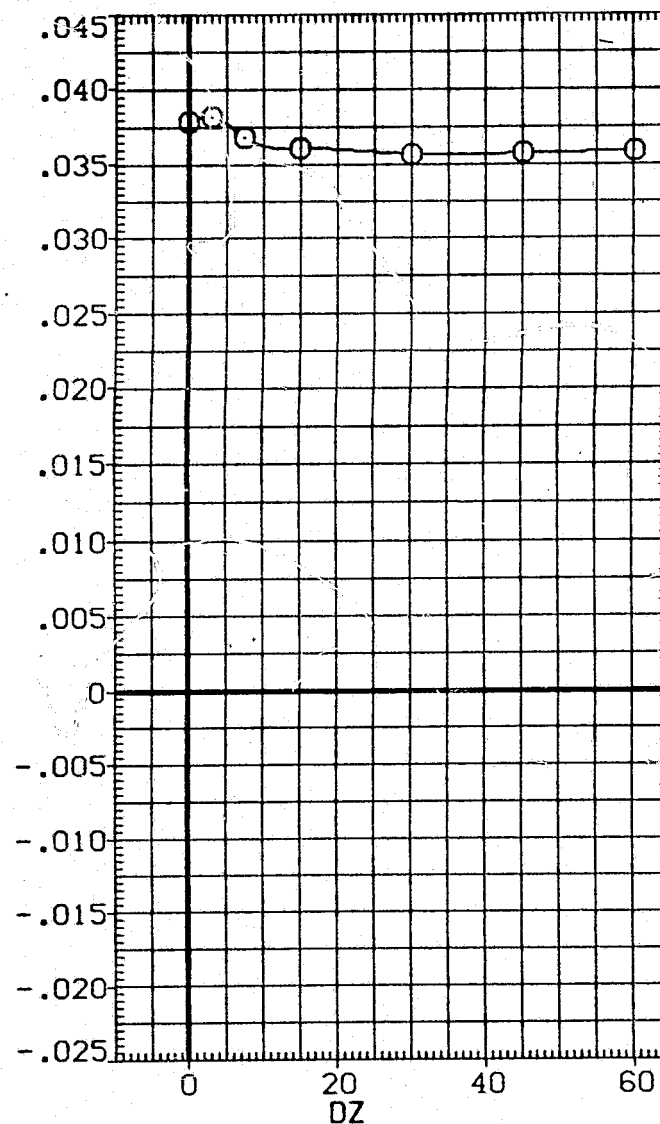
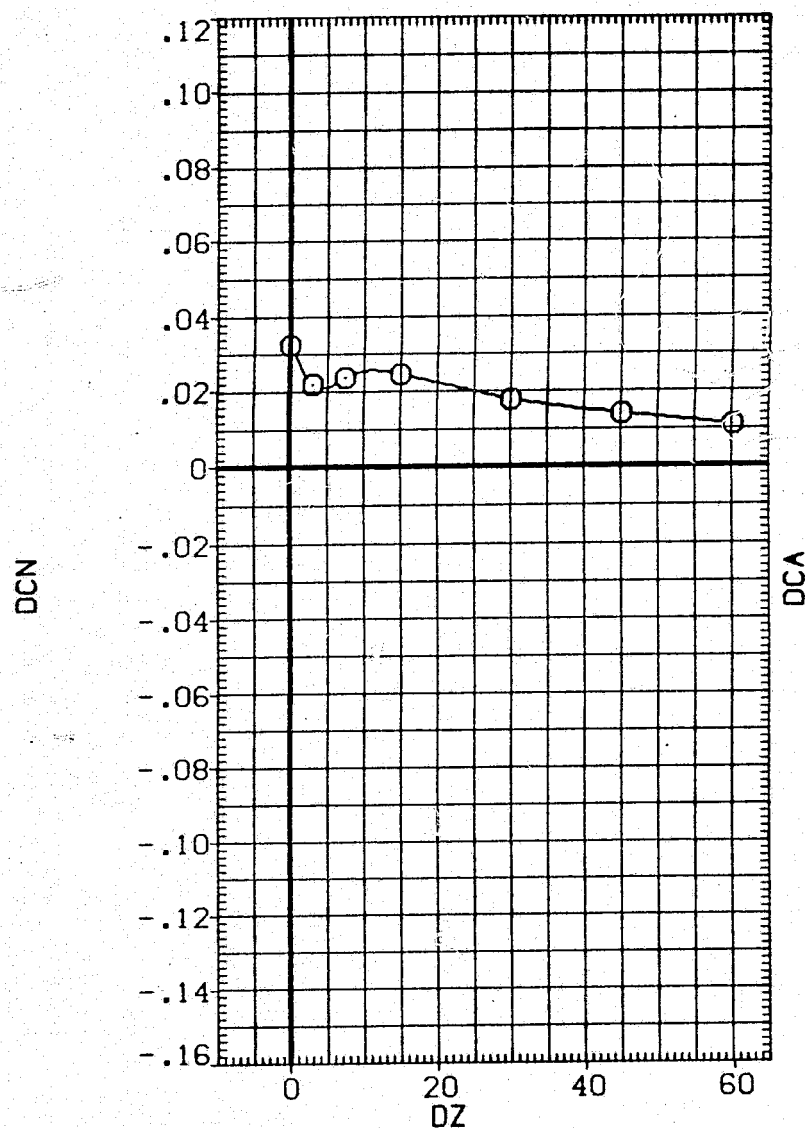


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) O CA20 747/1 01 S1 AT38 AT39

ORBITER DATA BETAC .000 BETA0 .000 DX .000

DY .000
REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

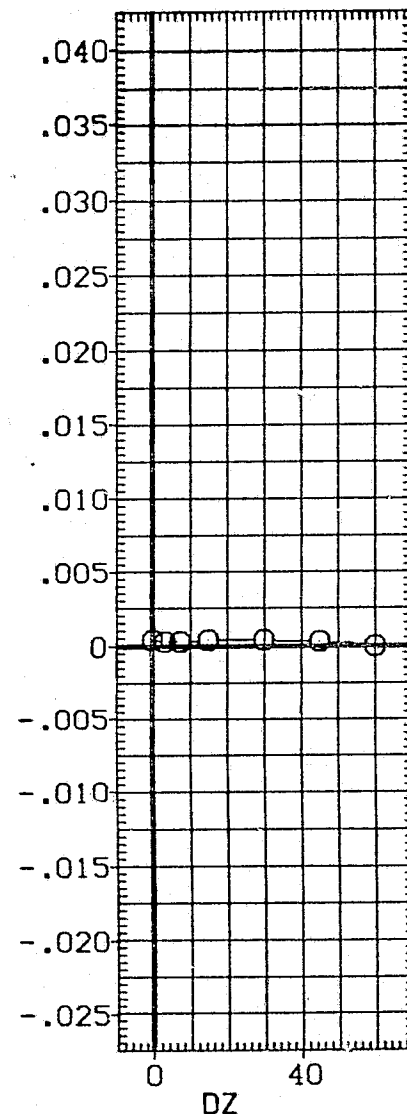
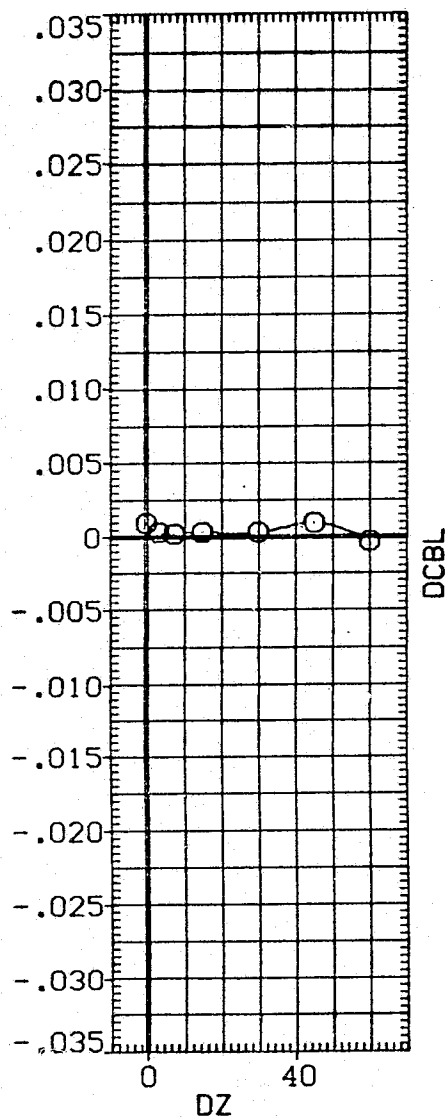
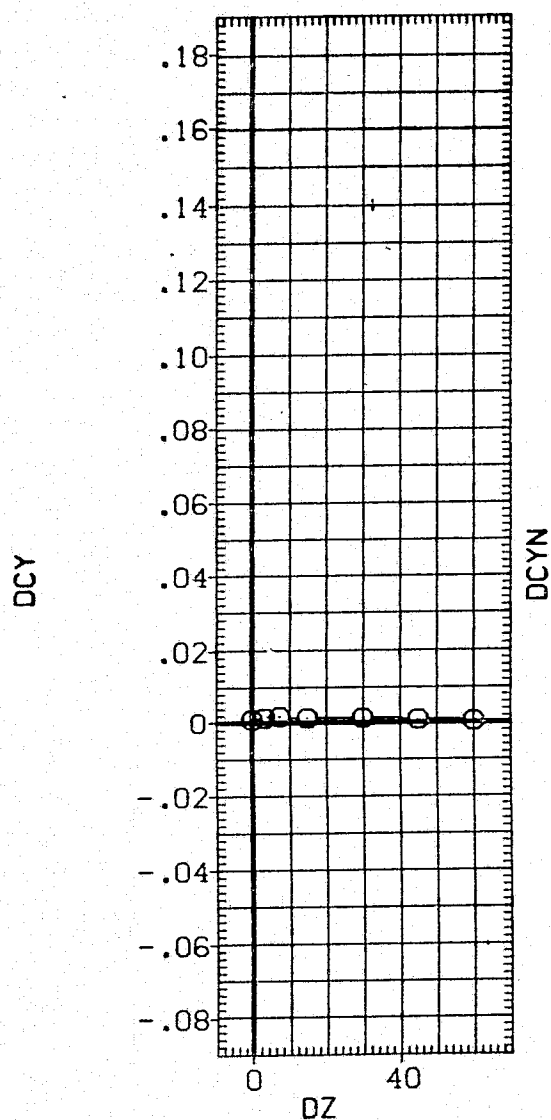


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) ALPHA0 = 8.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (XGNBCA) O CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

BETAC .000
 BETA0 .000
 DX .000

DY

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

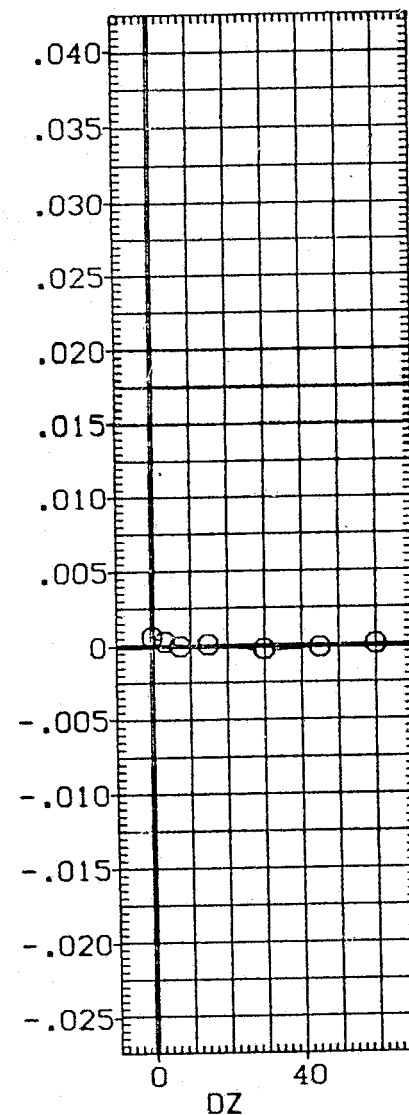
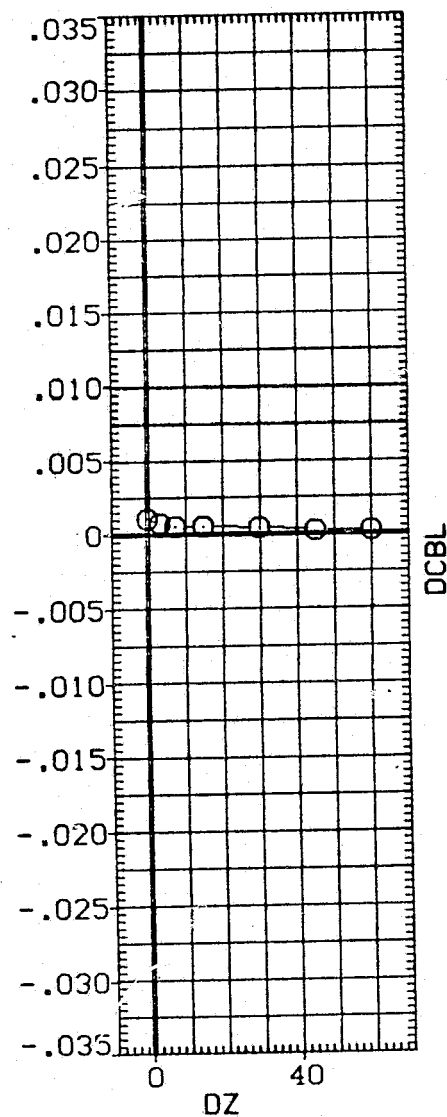
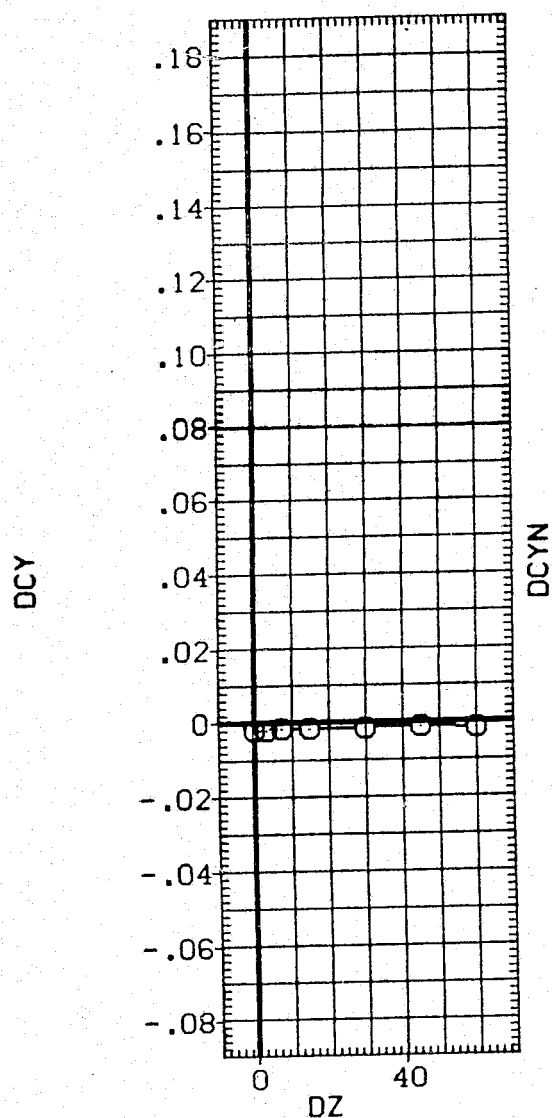


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (B) ALPHA0 = 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) O CA20 747/1 01 SI AT38 AT39

ORBITER DATA BETAC .000 BETA0 .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

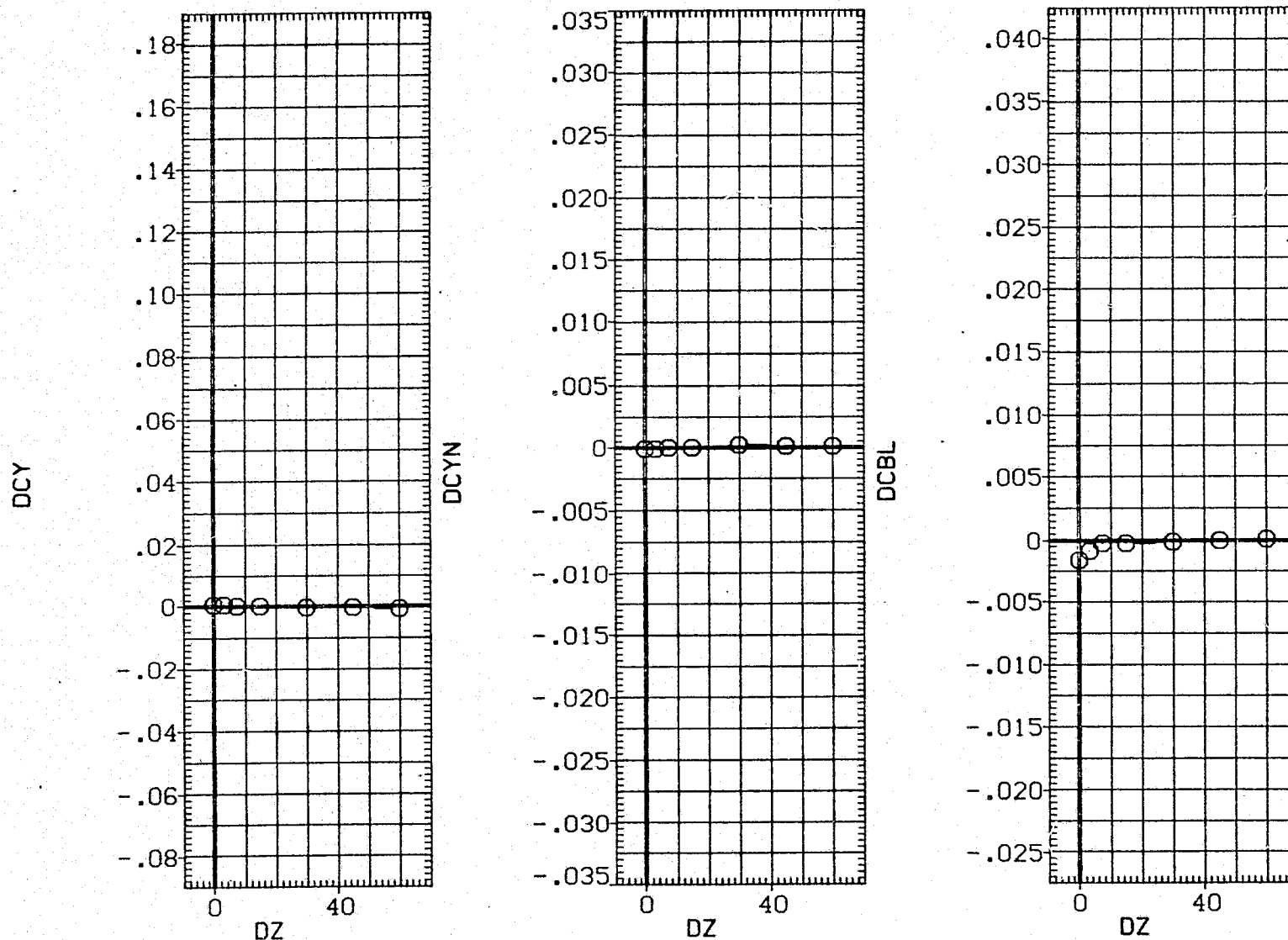


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(C)ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XHRP 1109.0000 IN.X0
YHRP .0000 IN.Y0
ZHRP 375.0000 IN.Z0
SCALE .0300

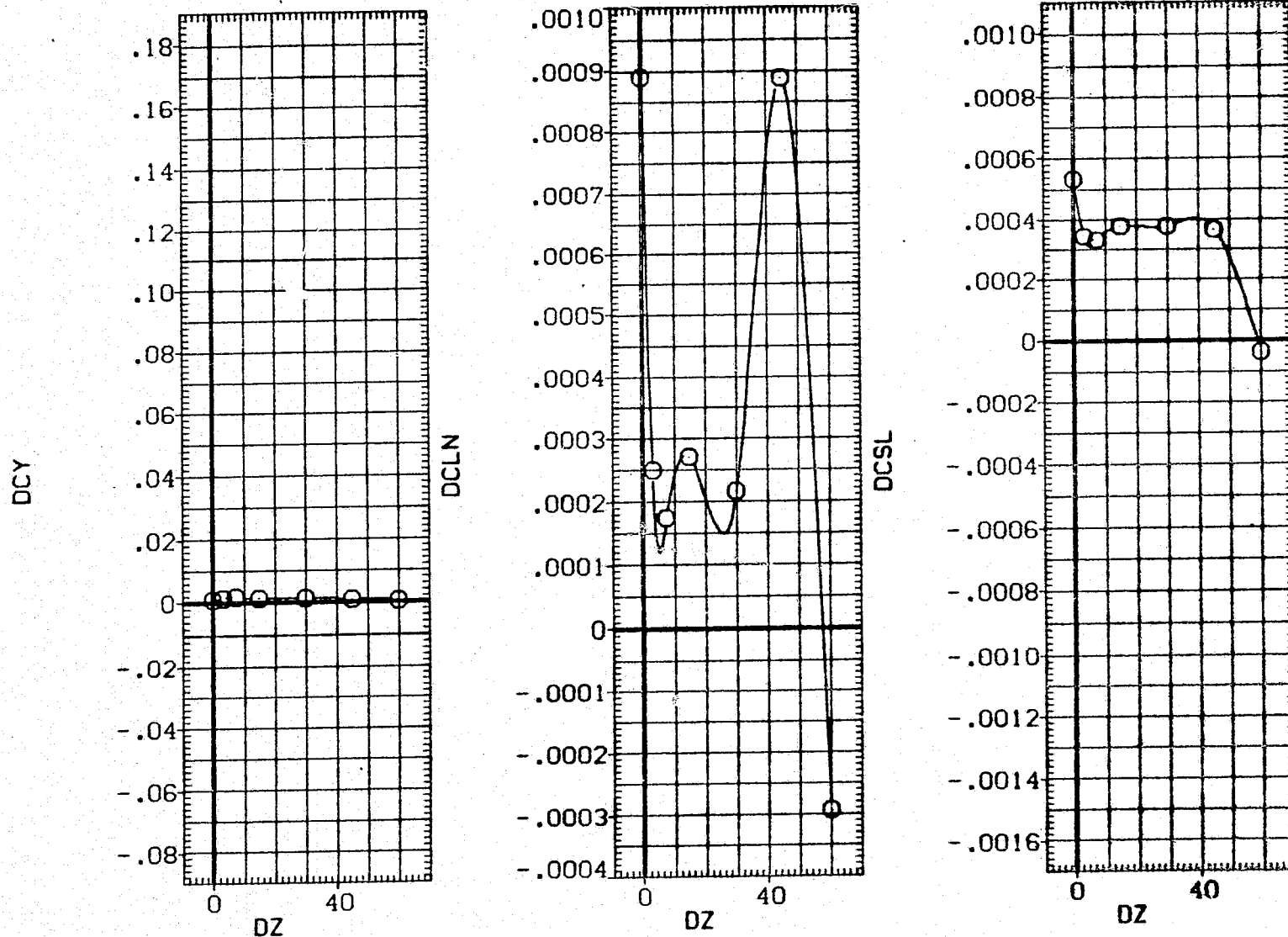


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) $\alpha_0 = 8.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

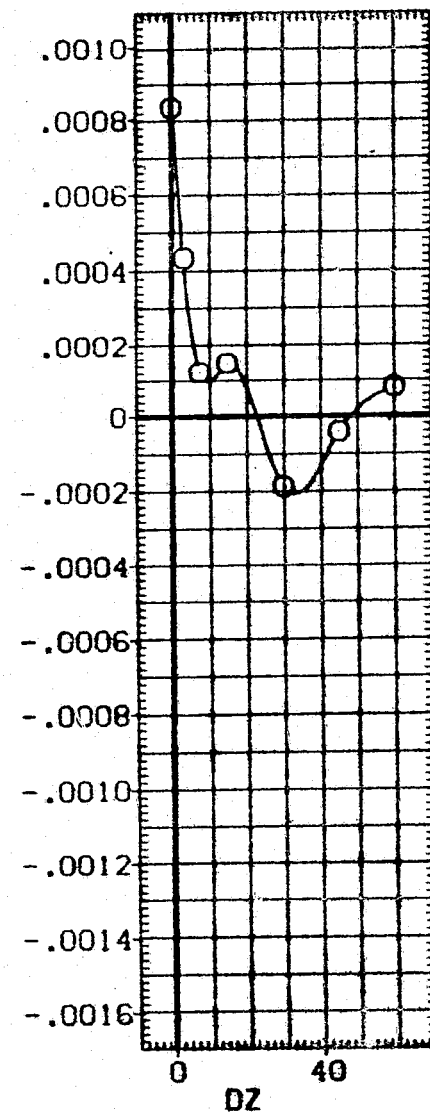
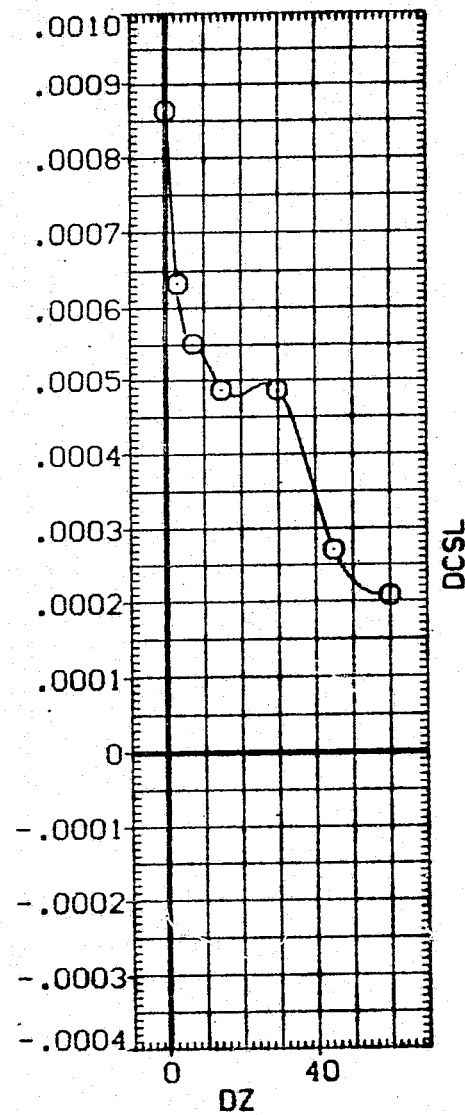
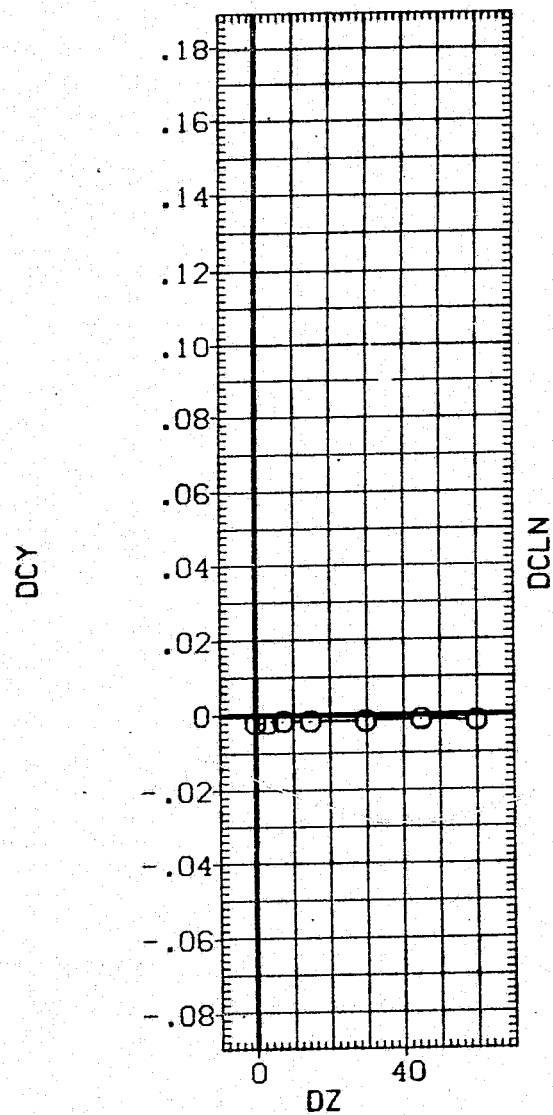


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B) ALPHA0 = 12.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBCA) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA BETAC .000 BETAO .000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6900 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

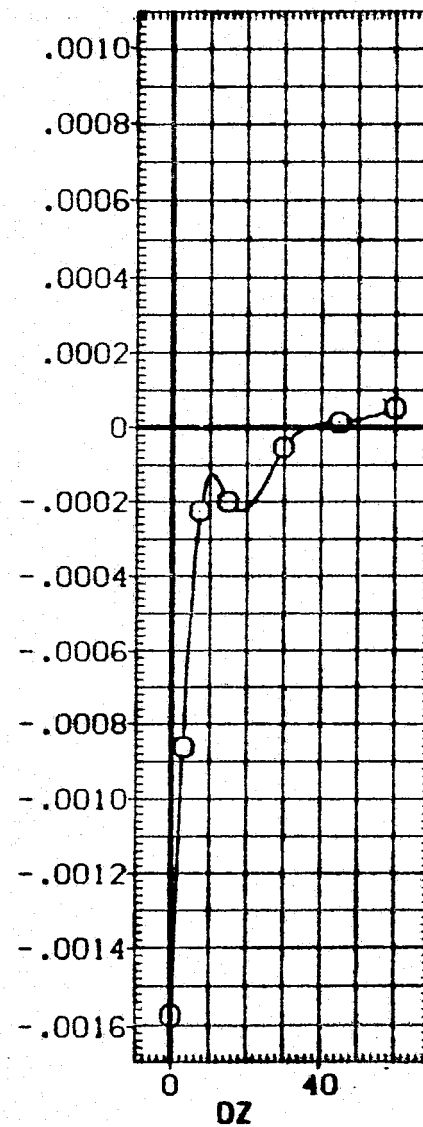
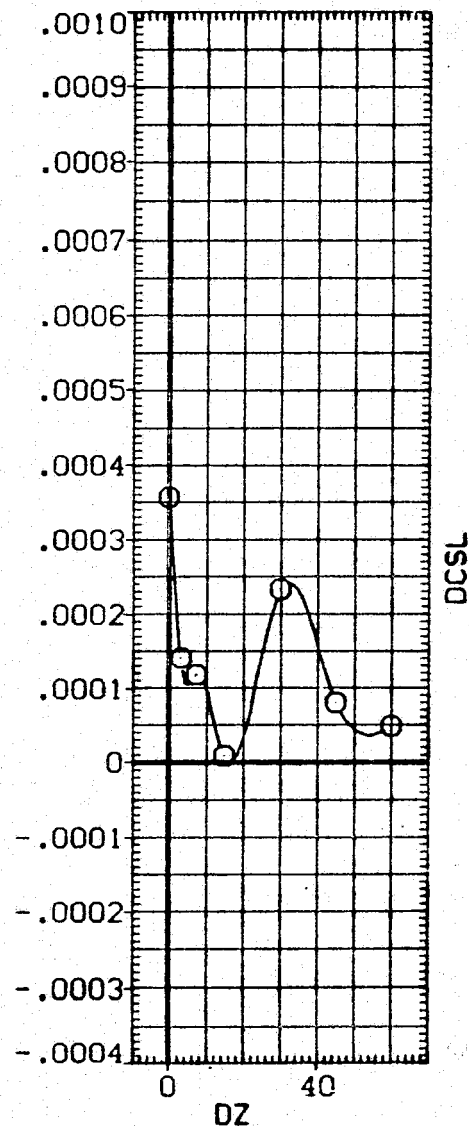
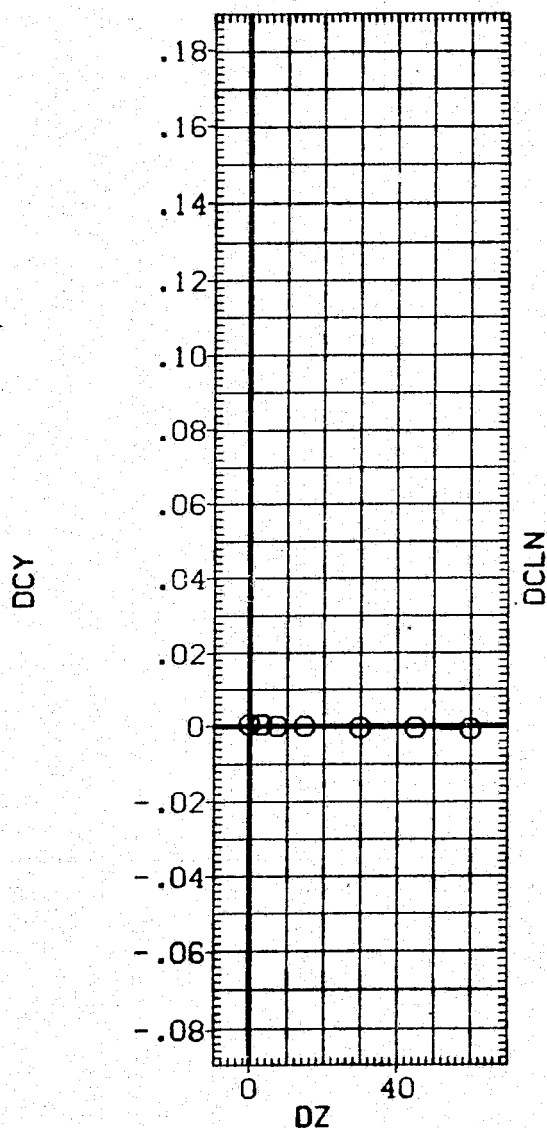


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(C) ALPHA0= 16.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNB08) O CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

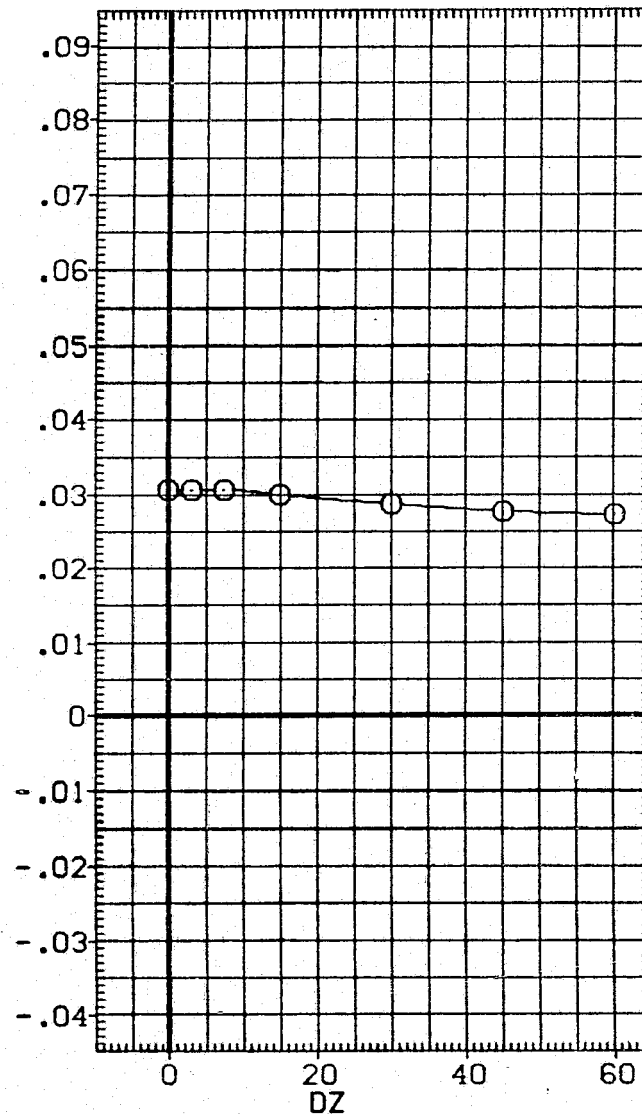
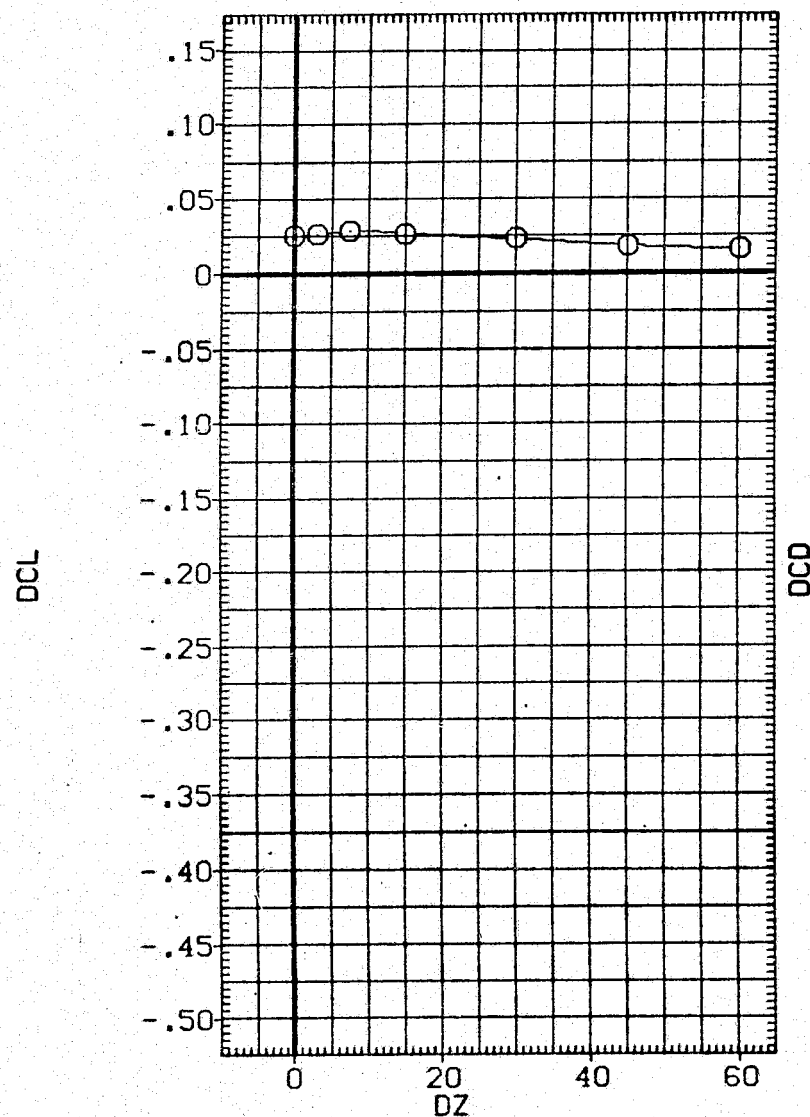


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) BETA0 = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (XGNBDB) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

IORB 8.000 ELEVON 5.000 OX .000 DY .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

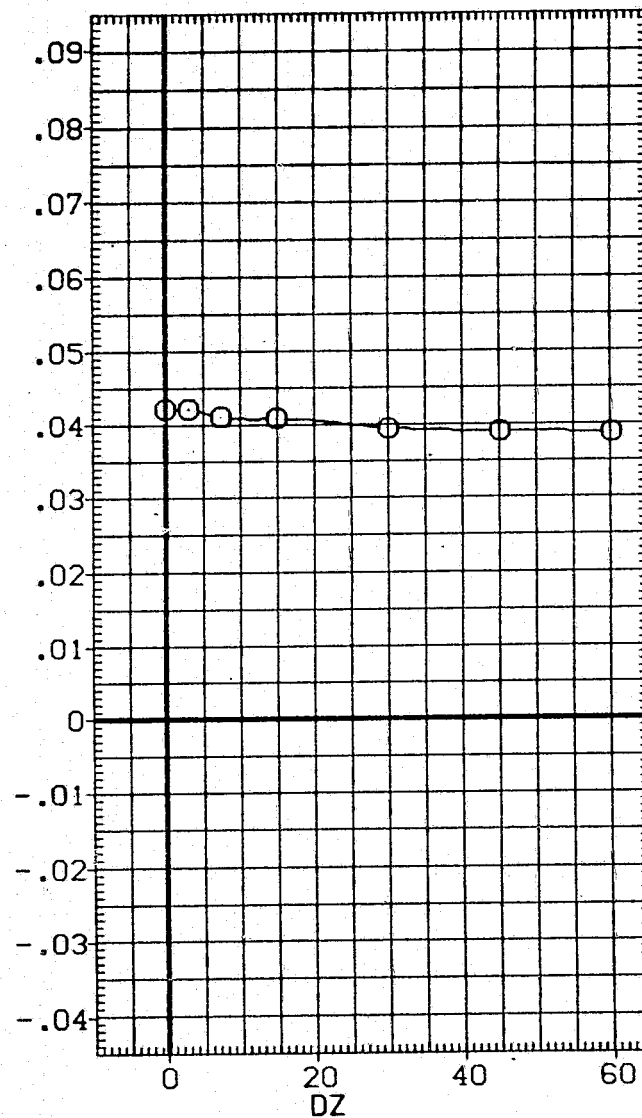
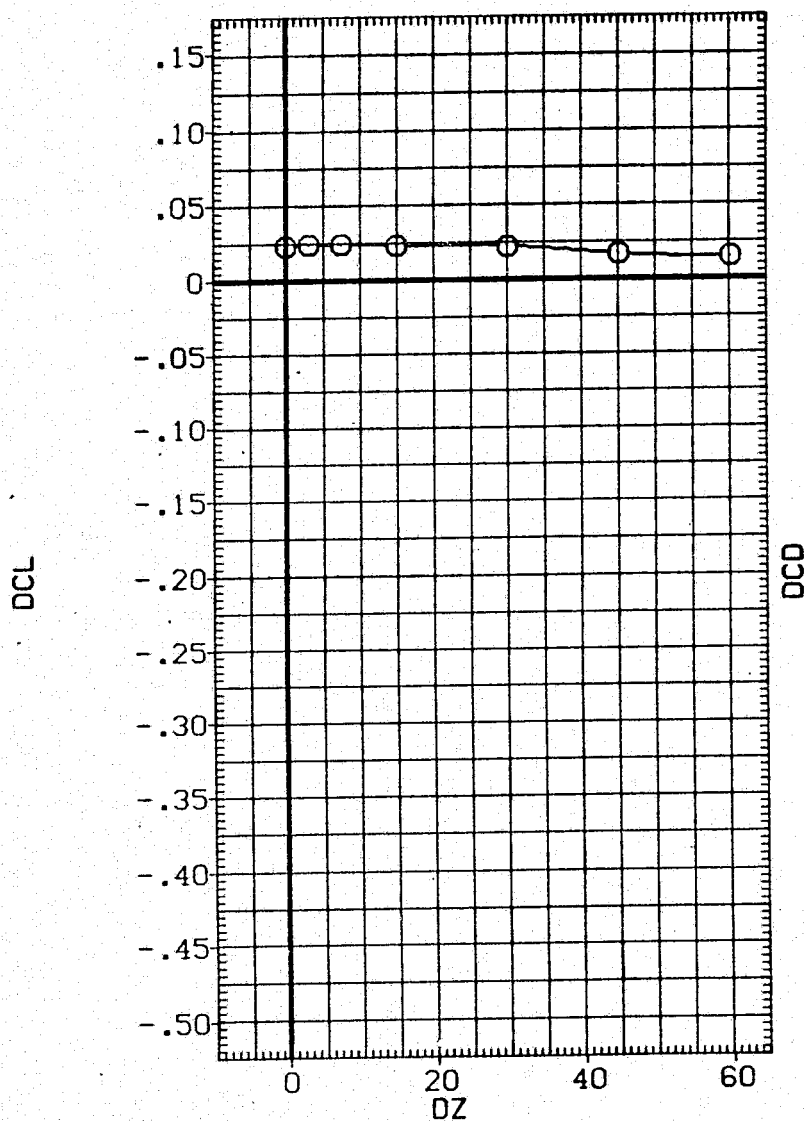


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (B)BETA0 = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBDB) O CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

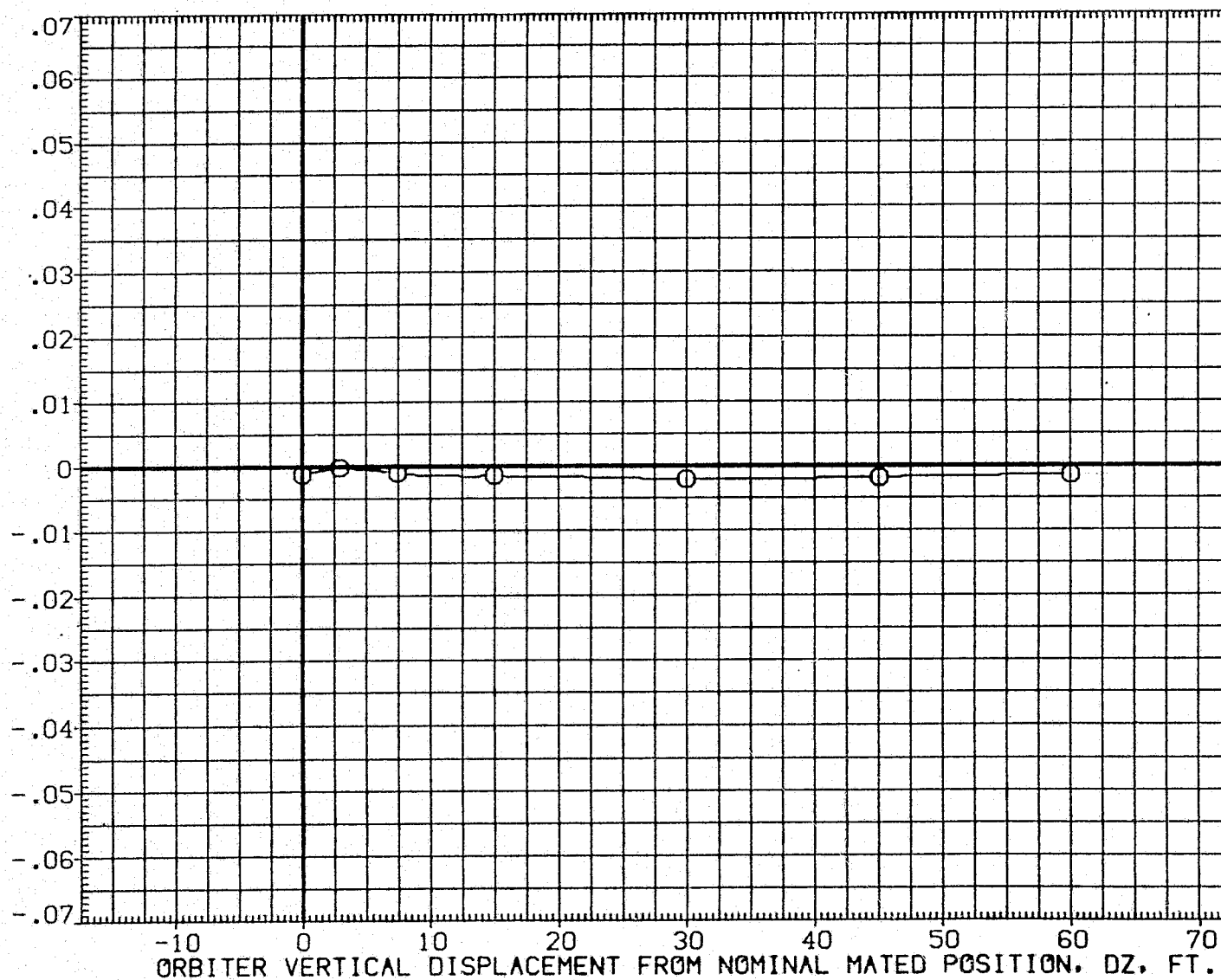


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE

(A) BETA0 = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (XGNB08) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
 SREF 2690.0000 SQ.FT.
 LREF 474.8100 IN.
 BREF 936.6800 IN.
 XMRP 1109.0000 IN.X0
 YMRP .0000 IN.Y0
 ZMRP 375.0000 IN.Z0
 SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

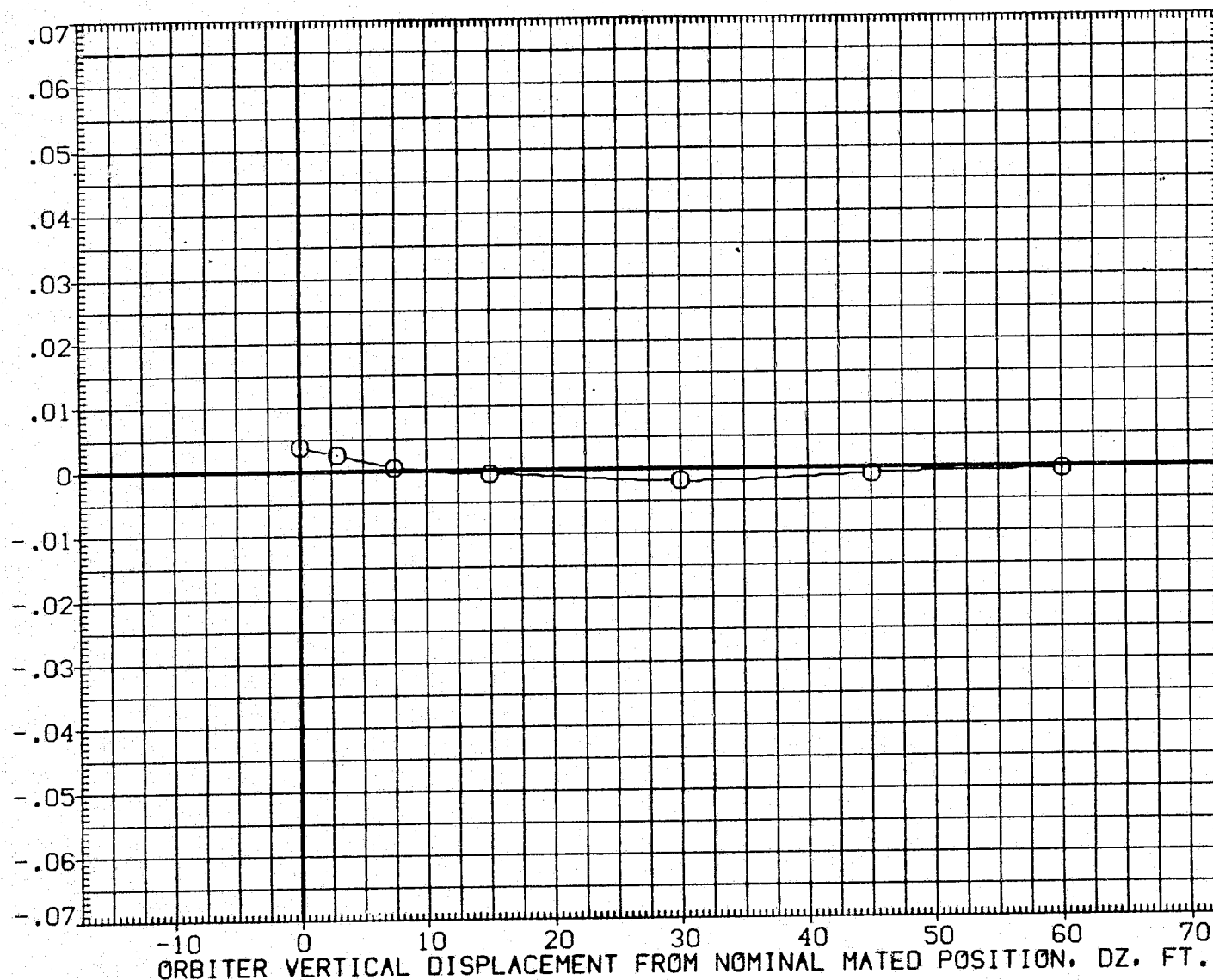


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
 (B)BETA0 = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNB08) O CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.0000 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

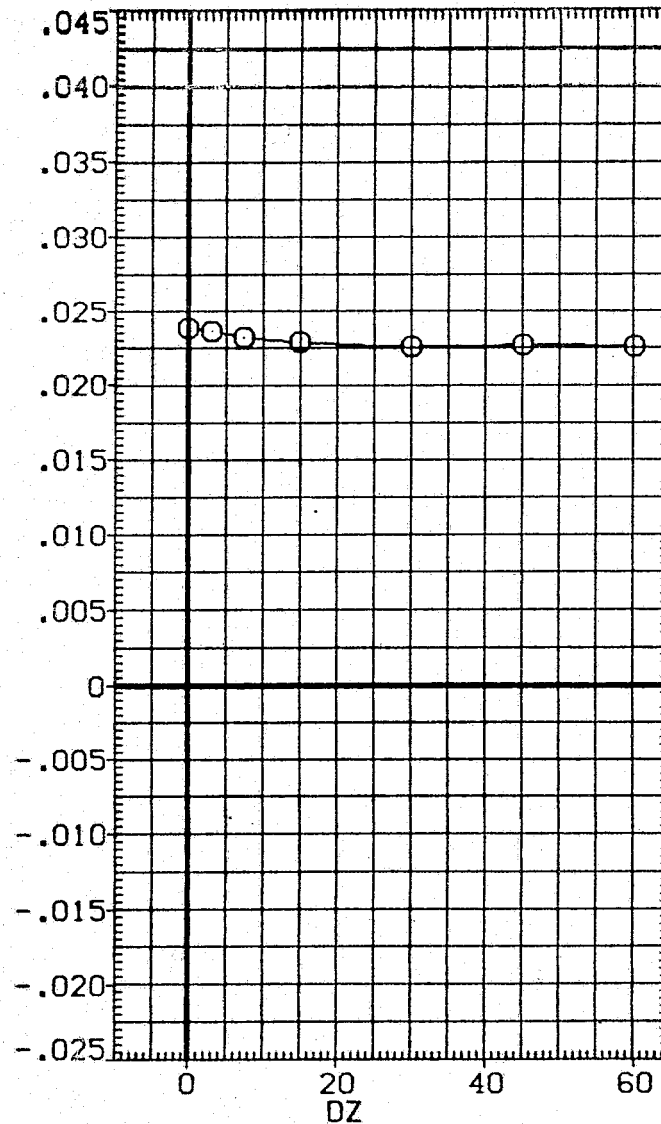
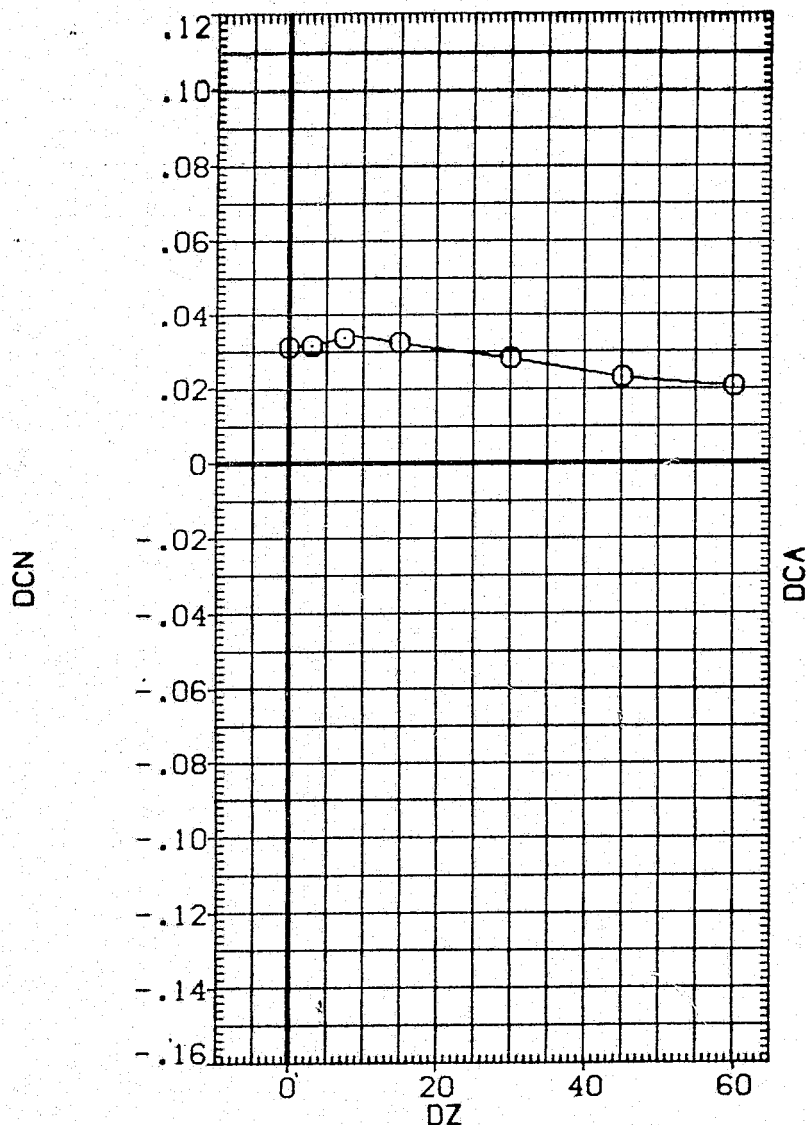


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) BETA0 = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNB08) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA

10RB 8.000
ELEVON 5.000
DX .000
DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

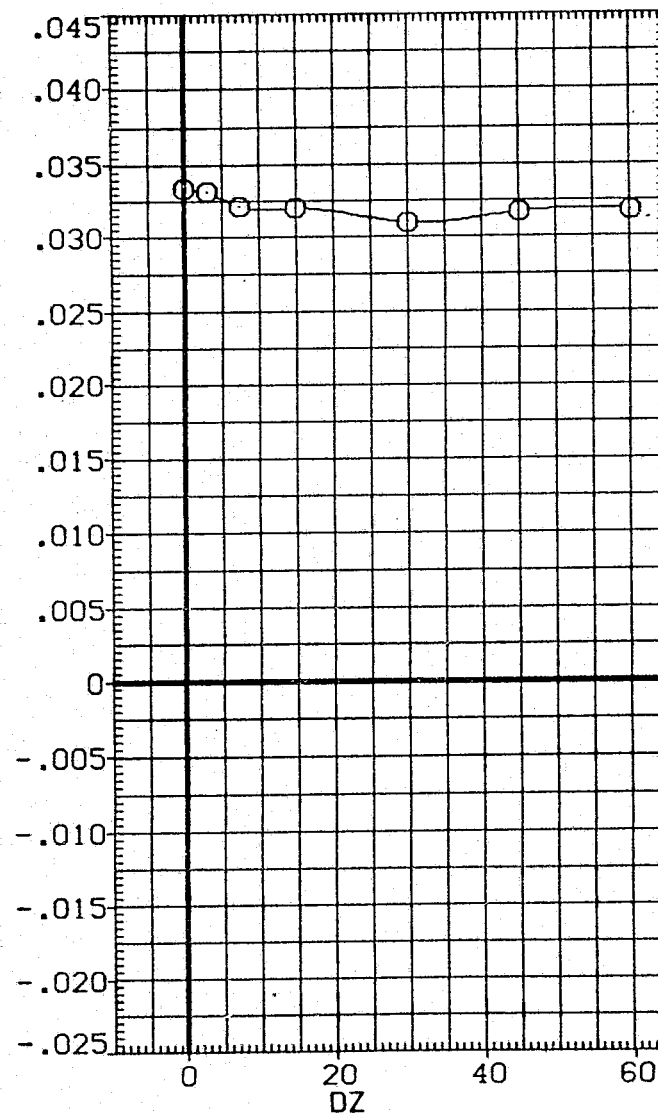
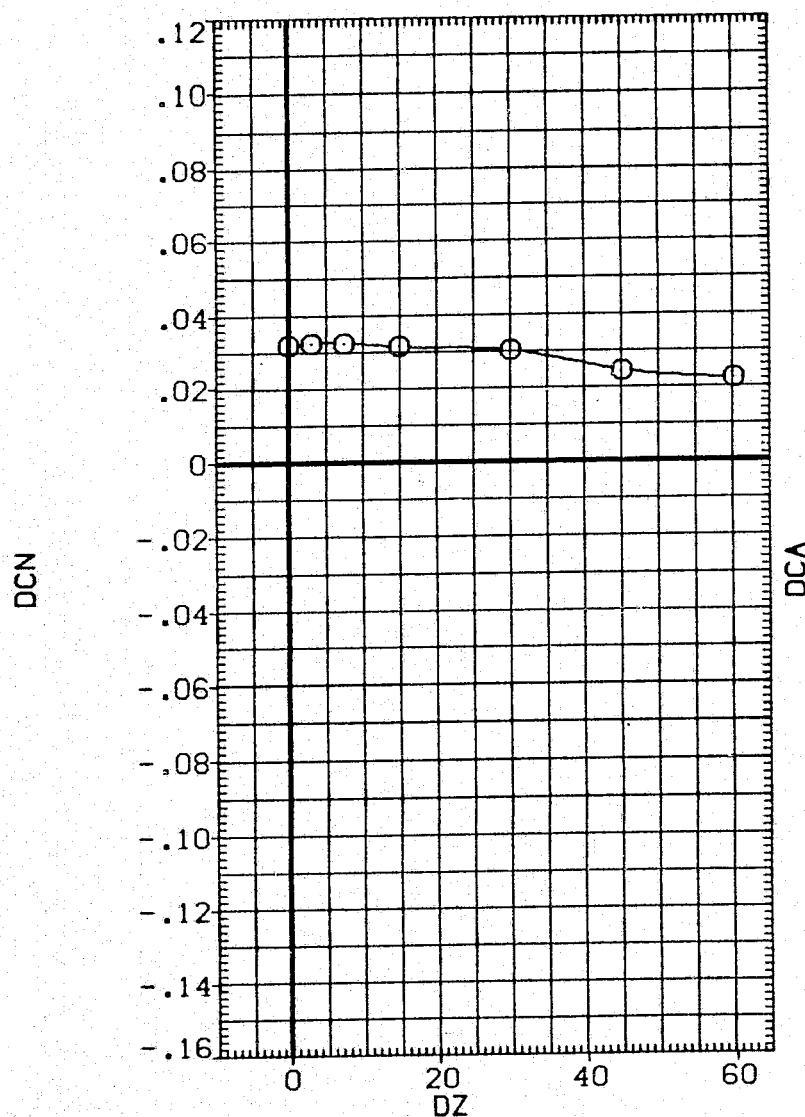


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B) BETA0 = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBDB) ○ CA20 747/1 01 S1 AT38 AT39

ORBITER DATA IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

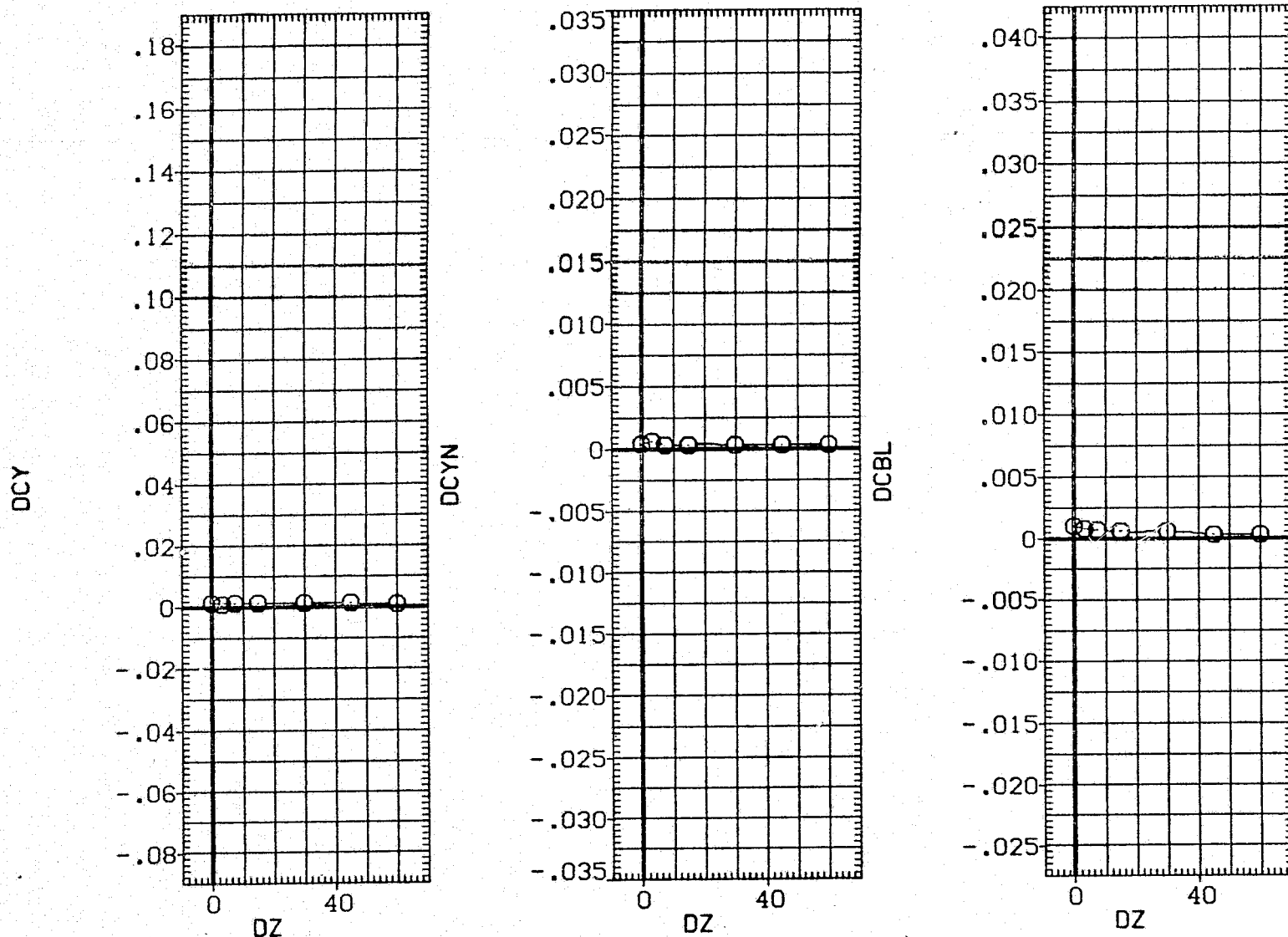


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) BETA0 = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBDB) O CA20 747/1 01 S1 AT38 AT39

ORBITER DATA IORB 8.000 ELEVON 5.000 DX .000

REFERENCE INFORMATION
DY .000
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.6200 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

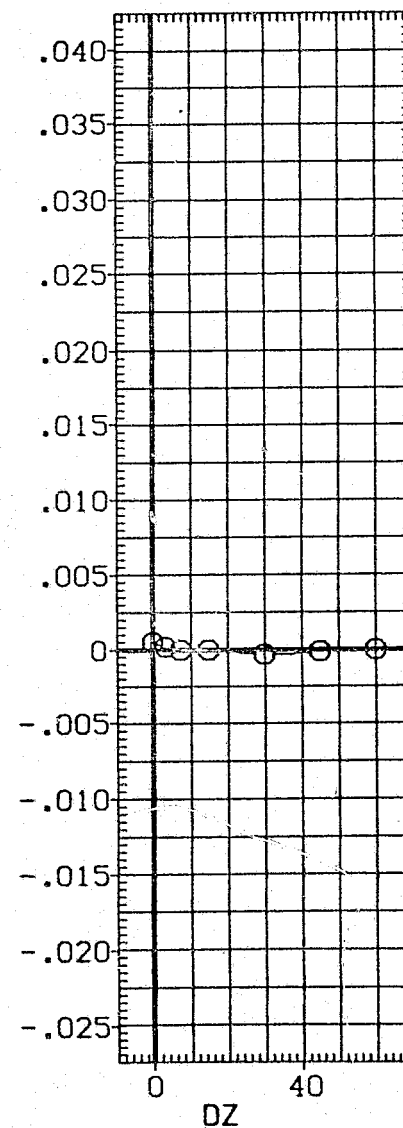
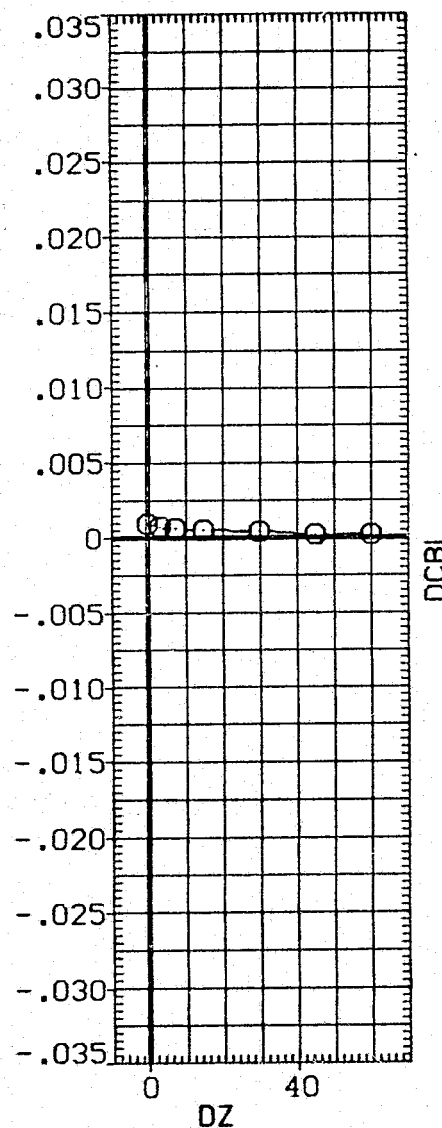
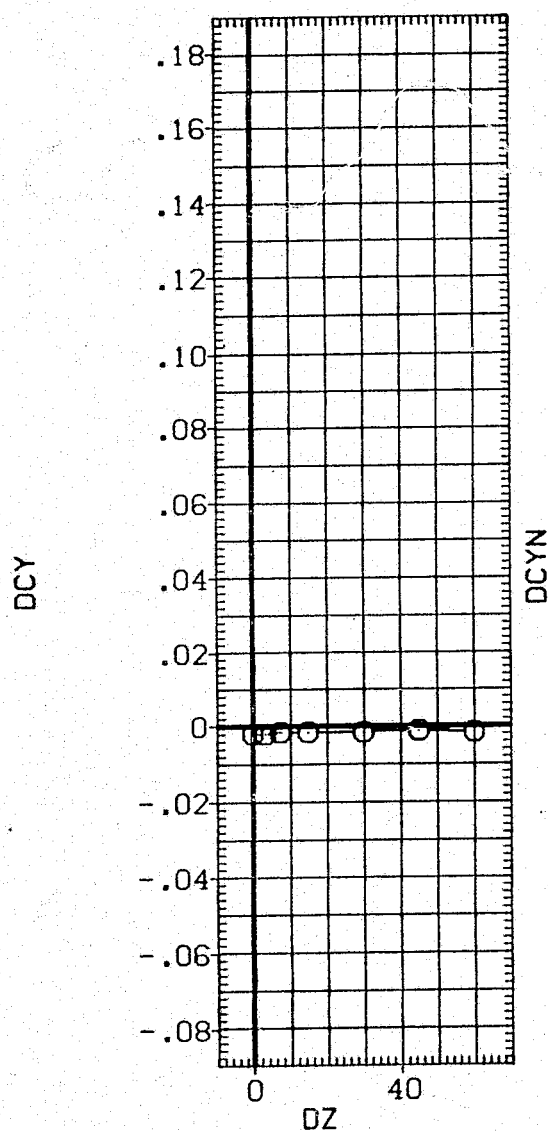


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B) BETA0 = .00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBDB) O CA20 747/1 01 S1 AT39 AT39

ORBITER DATA IORB 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

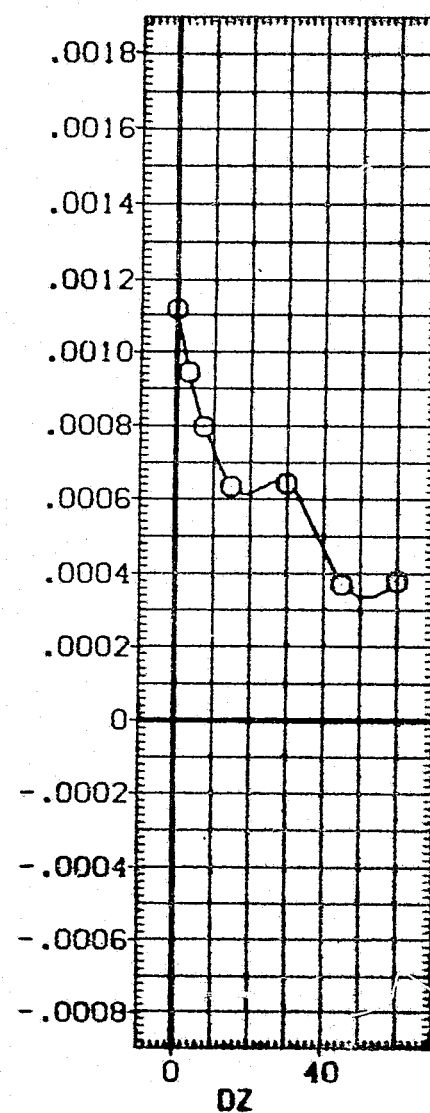
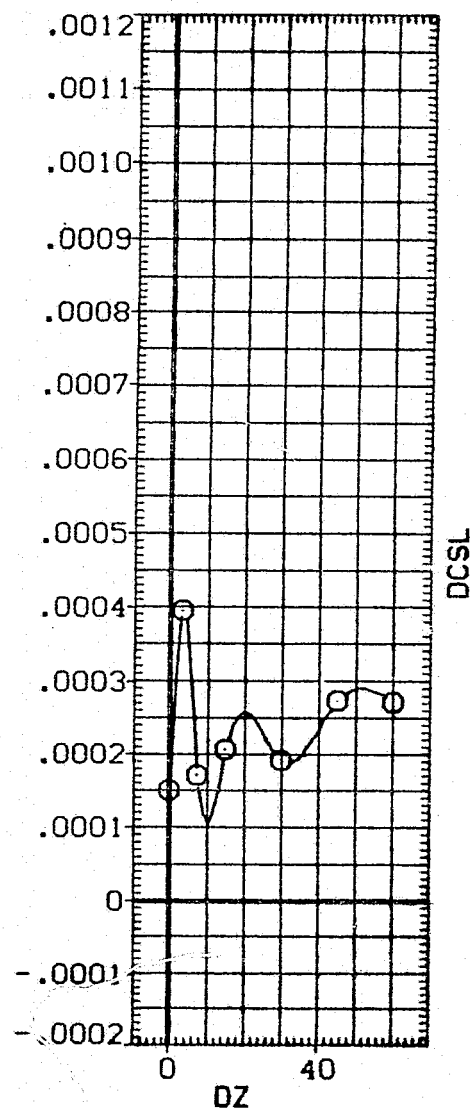
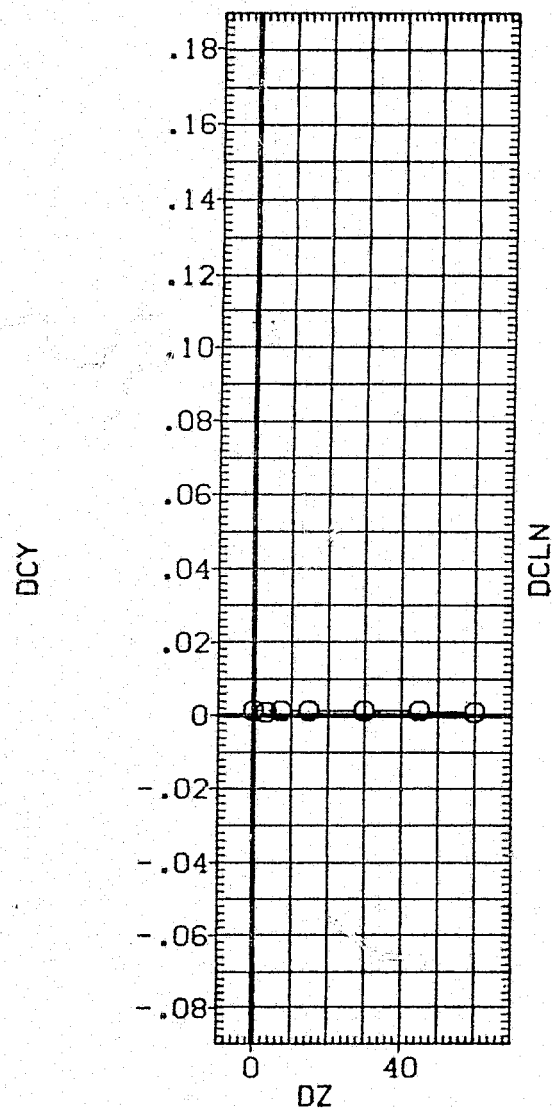


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(A) BETA0 = -5.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION
(XGNBD8) O CA20 747/1 01 S1 AT38 AT39

ORBITER DATA IOR8 8.000 ELEVON 5.000 DX .000 DY .000

REFERENCE INFORMATION
SREF 2690.0000 SQ.FT.
LREF 474.8100 IN.
BREF 936.6800 IN.
XMRP 1109.0000 IN.X0
YMRP .0000 IN.Y0
ZMRP 375.0000 IN.Z0
SCALE .0300

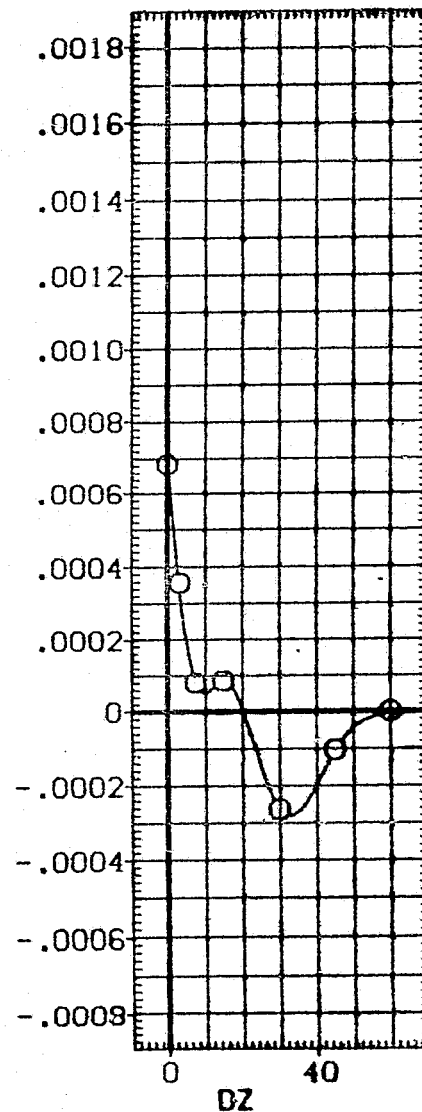
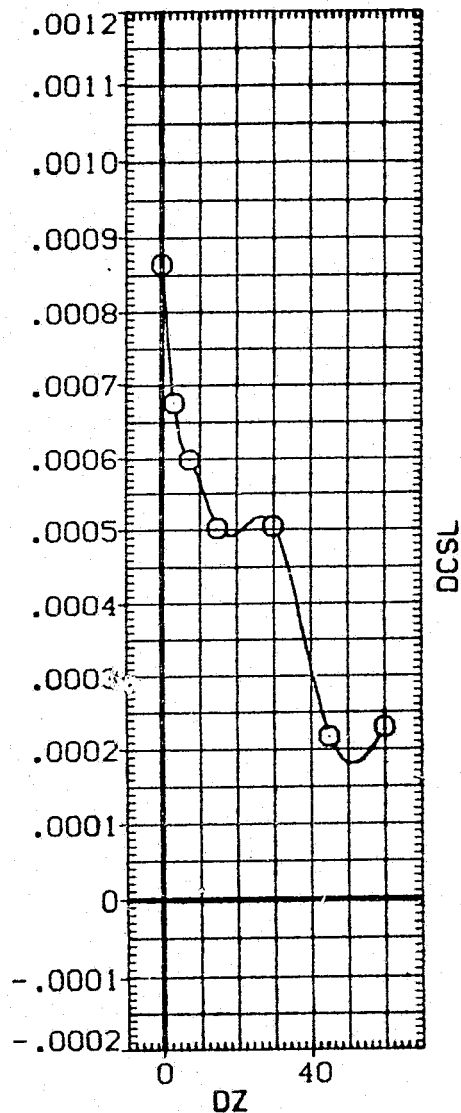
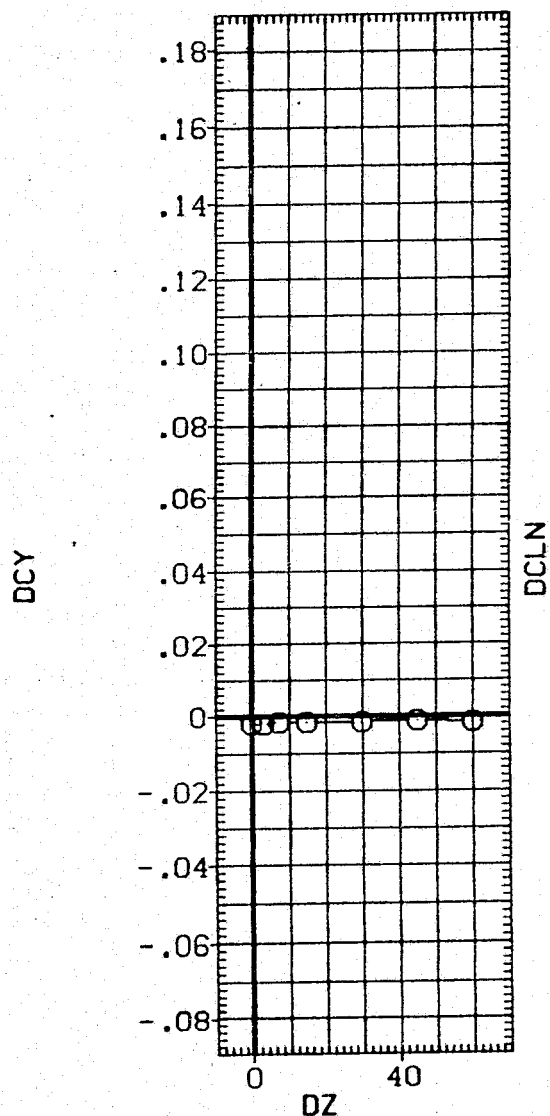


FIG 21C SPOILER EFFECTS ON ORBITER IN PRESENCE OF CARRIER WITH ATTACH HARDWARE
(B)BETA0 = .00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHAC	DY	DX	BETAO	REFERENCE INFORMATION
(IGN061)	CA20	747/1 01 S1 INTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20	747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	LREF 327.7800 IN.
(IGN053)	CA20	747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	BREF 2348.0400 IN.
(EGN061)	CA20	747/1 01 S1 UNINTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	XMRP 1339.9000 IN.XC
(EGN059)	CA20	747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.YC
(EGN053)	CA20	747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	ZMRP 190.8000 IN.ZC
							SCALE .0300

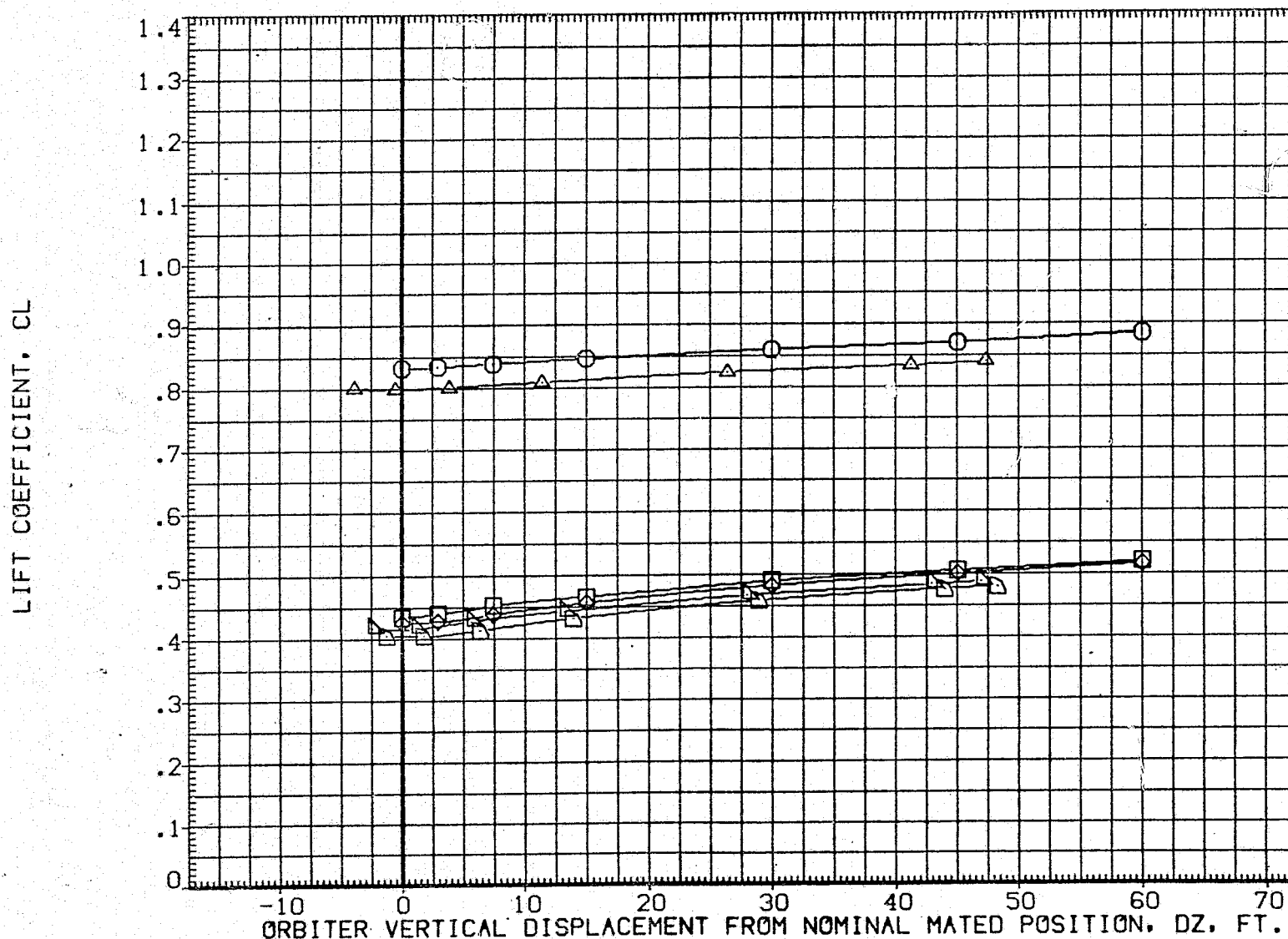


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (A) ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	DX	BETA0	REFERENCE INFORMATION
(IGN061)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	LREF 327.7800 IN.
(IGN053)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	BREF 2348.0400 IN.
(EGN061)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	XMRP 1339.9000 IN.XC
(EGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.YC
(EGN053)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	ZMRP 190.8000 IN.ZC
						SCALE .0300

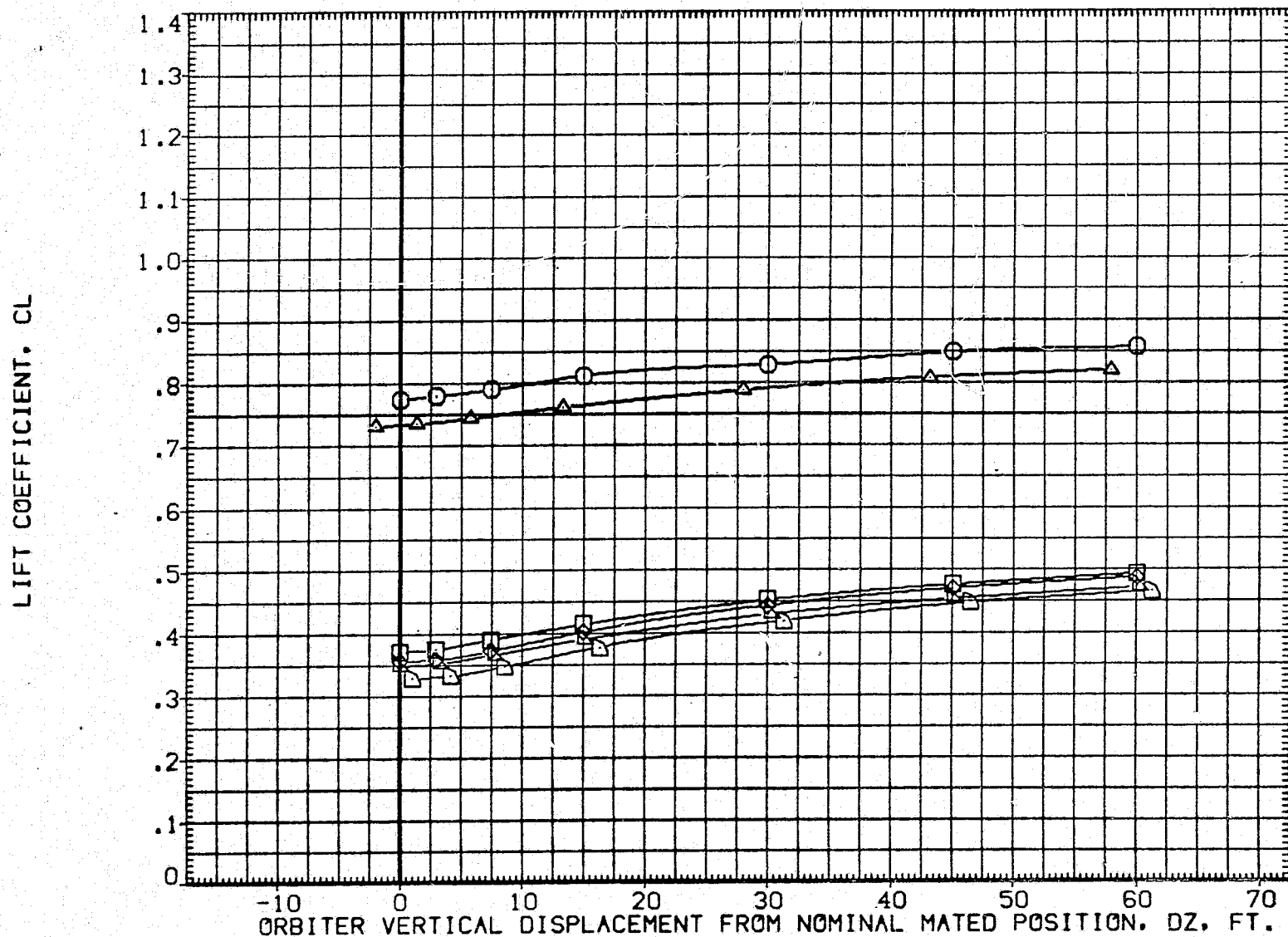


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA

(B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	CARRIER DATA	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION
(IGN061)	CA20	747/1 01 S1	INTERPOLATED	8.000	10.000	10.000	.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20	747/1 01 S1	INTERPOLATED	4.000	10.000	10.000	.000	LREF 327.7800 IN.
(IGN053)	CA20	747/1 01 S1	INTERPOLATED	4.000	.000	10.000	.000	BREF 2348.0400 IN.
(EGN061)	CA20	747/1 01 S1	UNINTERPOLATED	8.000	10.000	10.000	.000	XMRP 1339.9000 IN.XC
(EGN059)	CA20	747/1 01 S1	UNINTERPOLATED	4.000	10.000	10.000	.000	YMRP .0000 IN.YC
(EGN053)	CA20	747/1 01 S1	UNINTERPOLATED	4.000	.000	10.000	.000	ZMRP 190.8000 IN.ZC
								SCALE .0300

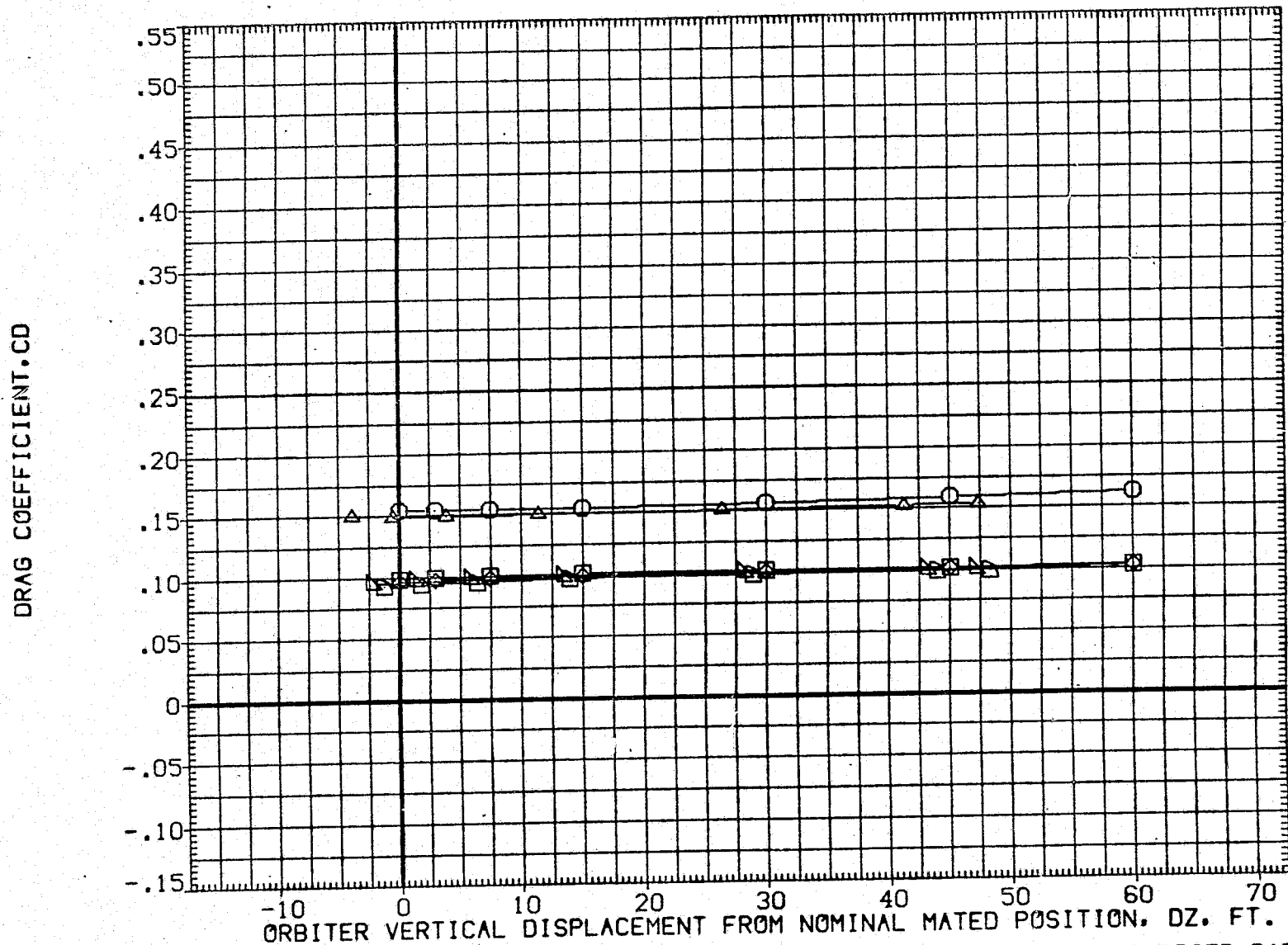


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (A)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	DX	BETA0	REFERENCE INFORMATION		
(IGN061)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	SREF	5500.0000	SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	LREF	327.7800	IN.
(IGN053)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	BREF	2348.0400	IN.
(EGN061)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	XMRP	1339.9000	IN.XC
(EGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	YMRP	.0000	IN.YC
(EGN053)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	ZMRP	190.8000	IN.ZC
						SCALE	.0300	

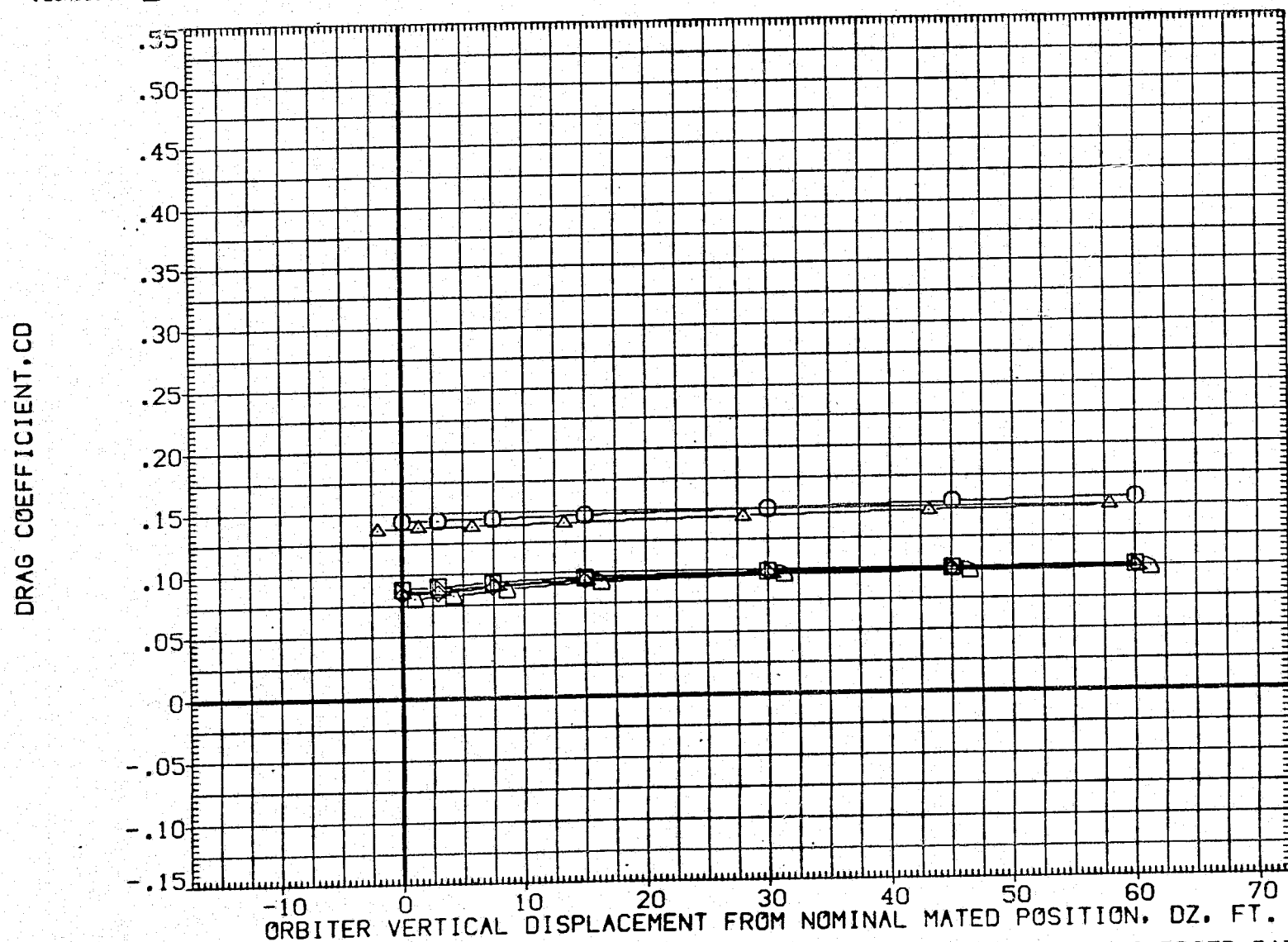


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	OX	BETA0	REFERENCE INFORMATION
(IGN061)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	LREF 327.7800 IN.
(IGN053)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	BREF 2348.0400 IN.
(EGN061)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	XMRP 1339.9000 IN.XC
(EGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.YC
(EGN053)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.300	.000	10.000	.000	ZMRP 190.8000 IN.ZC
						SCALE .0300

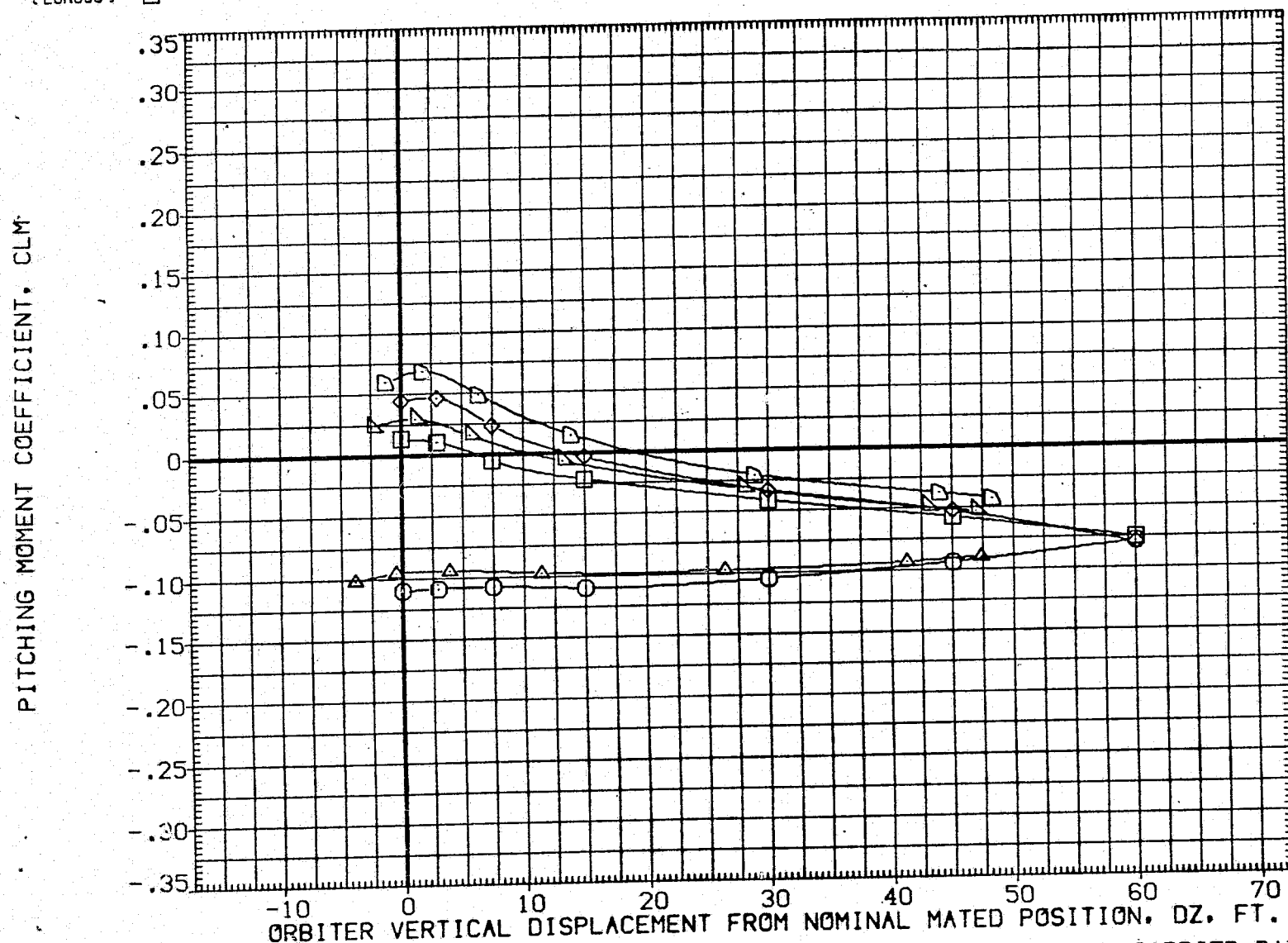


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (A)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	OY	DX	BETA0	REFERENCE INFORMATION		
(IGN061)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	SREF	5500.0000	SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	LREF	327.7800	IN.
(IGN053)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	BREF	2348.0400	IN.
(EGN061)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	XMRP	1339.9000	IN.XC
(EGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	YMRP	.0000	IN.YC
(EGN053)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	ZMRP	190.8000	IN.ZC
						SCALE	.0300	

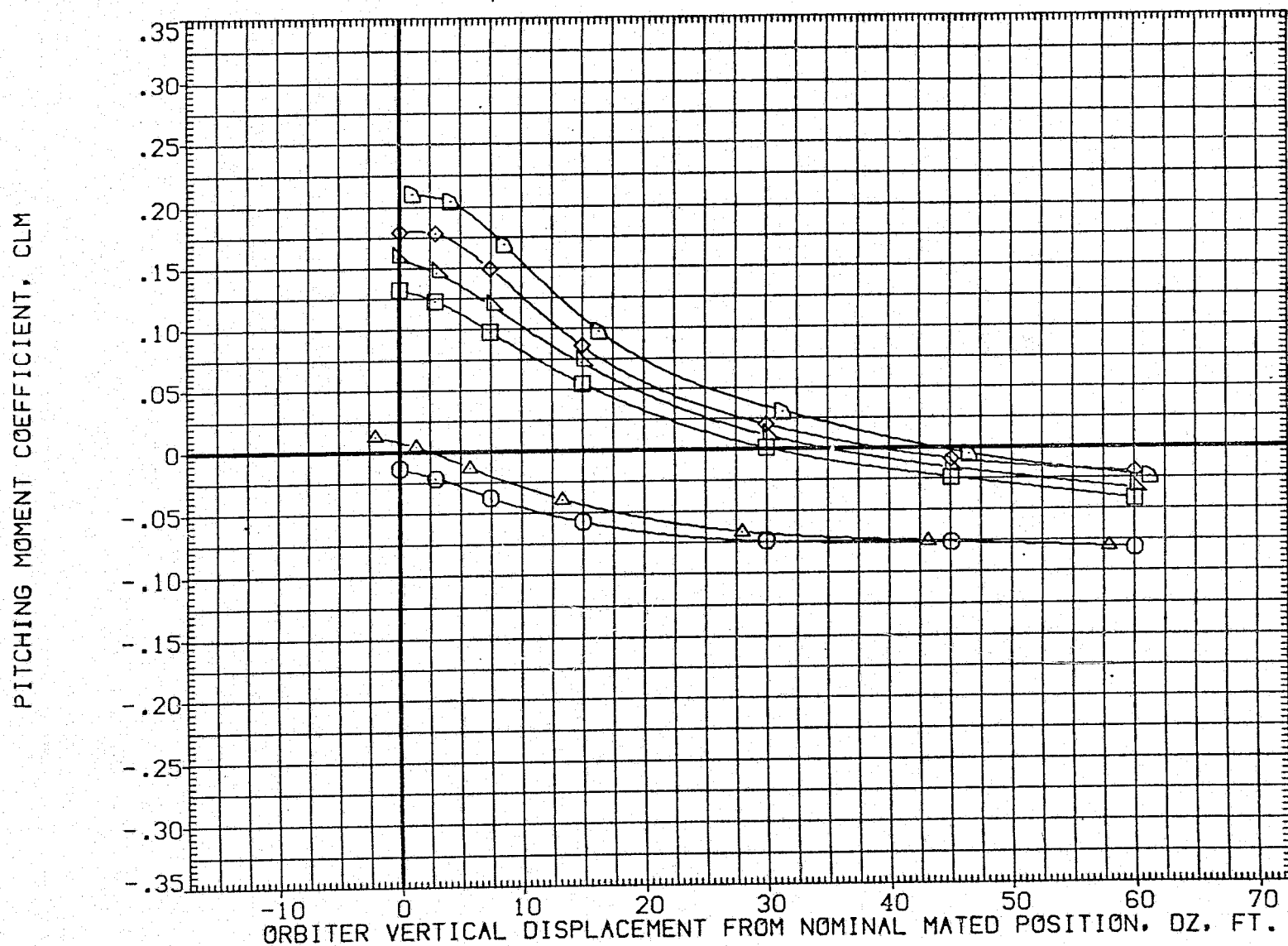


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
(B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION		
(IGN061)	CA20	747/1 01 S1 INTERPOLATED	8.000	10.000	10.000	.000	SREF	5500.0000	SQ.FT.
(IGN059)	CA20	747/1 01 S1 INTERPOLATED	4.000	10.000	10.000	.000	LREF	327.7800	IN.
(IGN053)	CA20	747/1 01 S1 INTERPOLATED	4.000	.000	10.000	.000	BREF	2348.0400	IN.
(FGN061)	CA20	747/1 01 S1 UNINTERPOLATED	8.000	10.000	10.000	.000	XMRP	1339.9000	IN.XC
(FGN059)	CA20	747/1 01 S1 UNINTERPOLATED	4.000	10.000	10.000	.000	YMRP	.0000	IN.YC
(FGN053)	CA20	747/1 01 S1 UNINTERPOLATED	4.000	.000	10.000	.000	ZMRP	190.8000	IN.ZC
							SCALE	.0300	

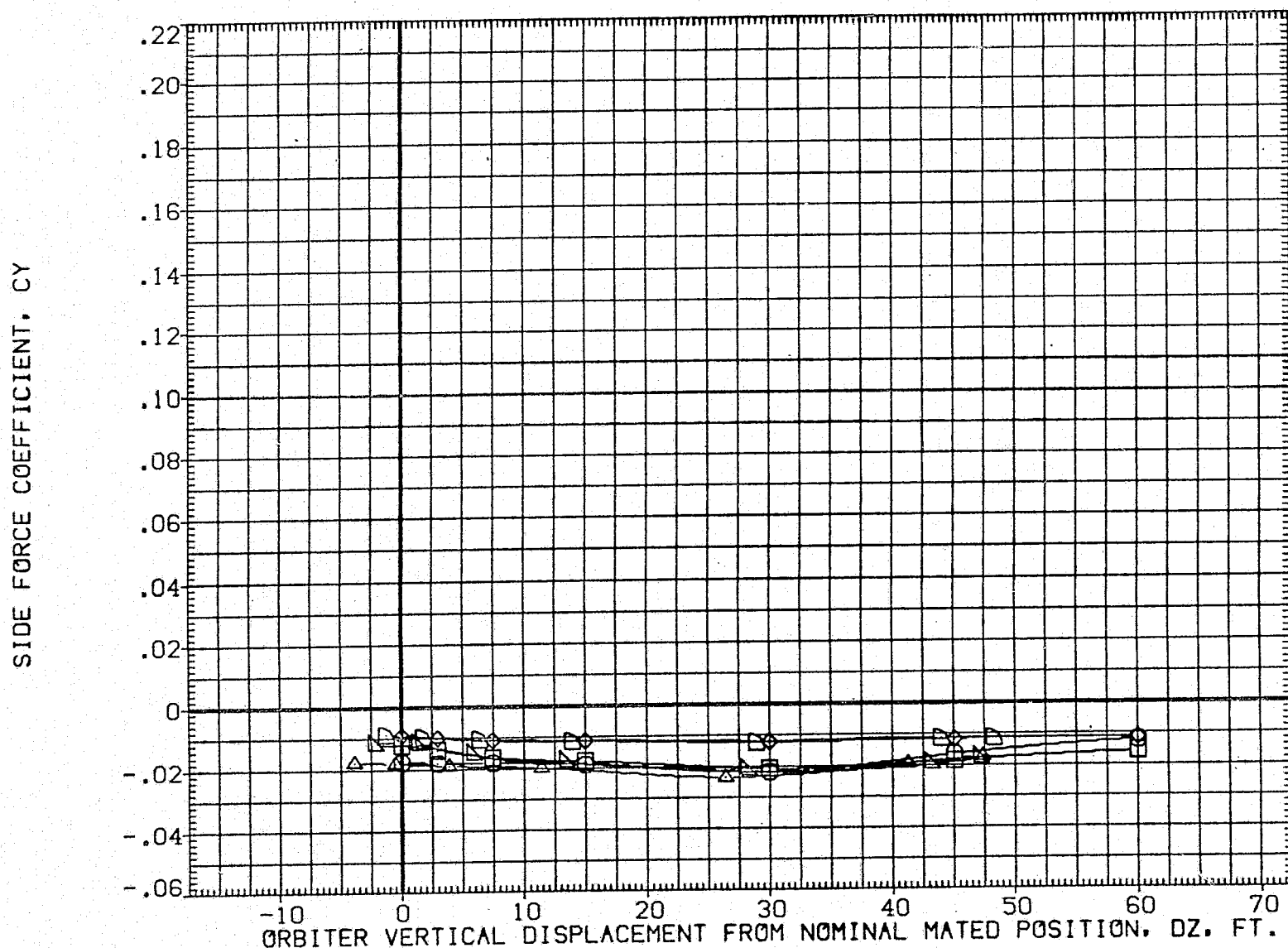


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (A) ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION
(IGN061)	CA20	747/1 01 S1 INTERPOLATED	8.000	10.000	10.000	.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20	747/1 01 S1 INTERPOLATED	4.000	10.000	10.000	.000	LREF 327.7800 IN.
(IGN053)	CA20	747/1 01 S1 INTERPOLATED	4.000	.000	10.000	.000	BREF 2348.0400 IN.
(FGN061)	CA20	747/1 01 S1 UNINTERPOLATED	8.000	10.000	10.000	.000	XMRP 1339.9000 IN.XC
(FGN059)	CA20	747/1 01 S1 UNINTERPOLATED	4.000	10.000	10.000	.000	YMRP .0000 IN.YC
(FGN053)	CA20	747/1 01 S1 UNINTERPOLATED	4.000	.000	10.000	.000	ZMRP 190.8000 IN.ZC
							SCALE .0300

SIDE FORCE COEFFICIENT, CY

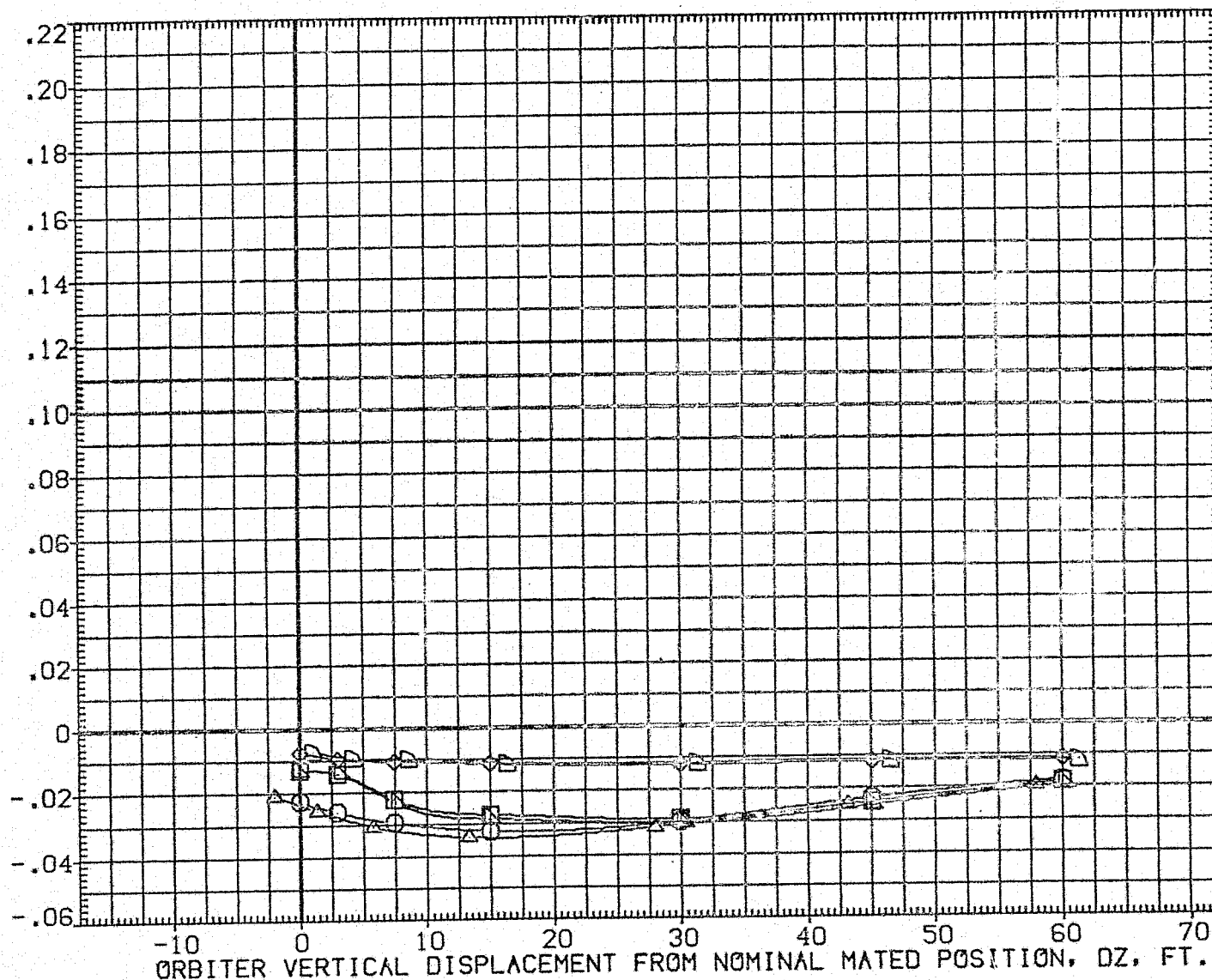


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
(B) ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHAC	DY	DX	BETA0	REFERENCE INFORMATION
(1GN061)	CA20	747/1 01 S1 INTERPOLATED	8.000	10.000	10.000	.000	SREF 5500.0000 SQ.FT.
(1GN059)	CA20	747/1 01 S1 INTERPOLATED	4.000	10.000	10.000	.000	LREF 327.7800 IN.
(1GN053)	CA20	747/1 01 S1 INTERPOLATED	4.000	.000	10.000	.000	BREF 2348.0400 IN.
(FGN061)	CA20	747/1 01 S1 UNINTERPOLATED	8.000	10.000	10.000	.000	XMRP 1339.9000 IN.XC
(FGN059)	CA20	747/1 01 S1 UNINTERPOLATED	4.000	10.000	10.000	.000	YMRP .0000 IN.YC
(FGN053)	CA20	747/1 01 S1 UNINTERPOLATED	4.000	.000	10.000	.000	ZMRP 190.8000 IN.ZC
							SCALE .0300

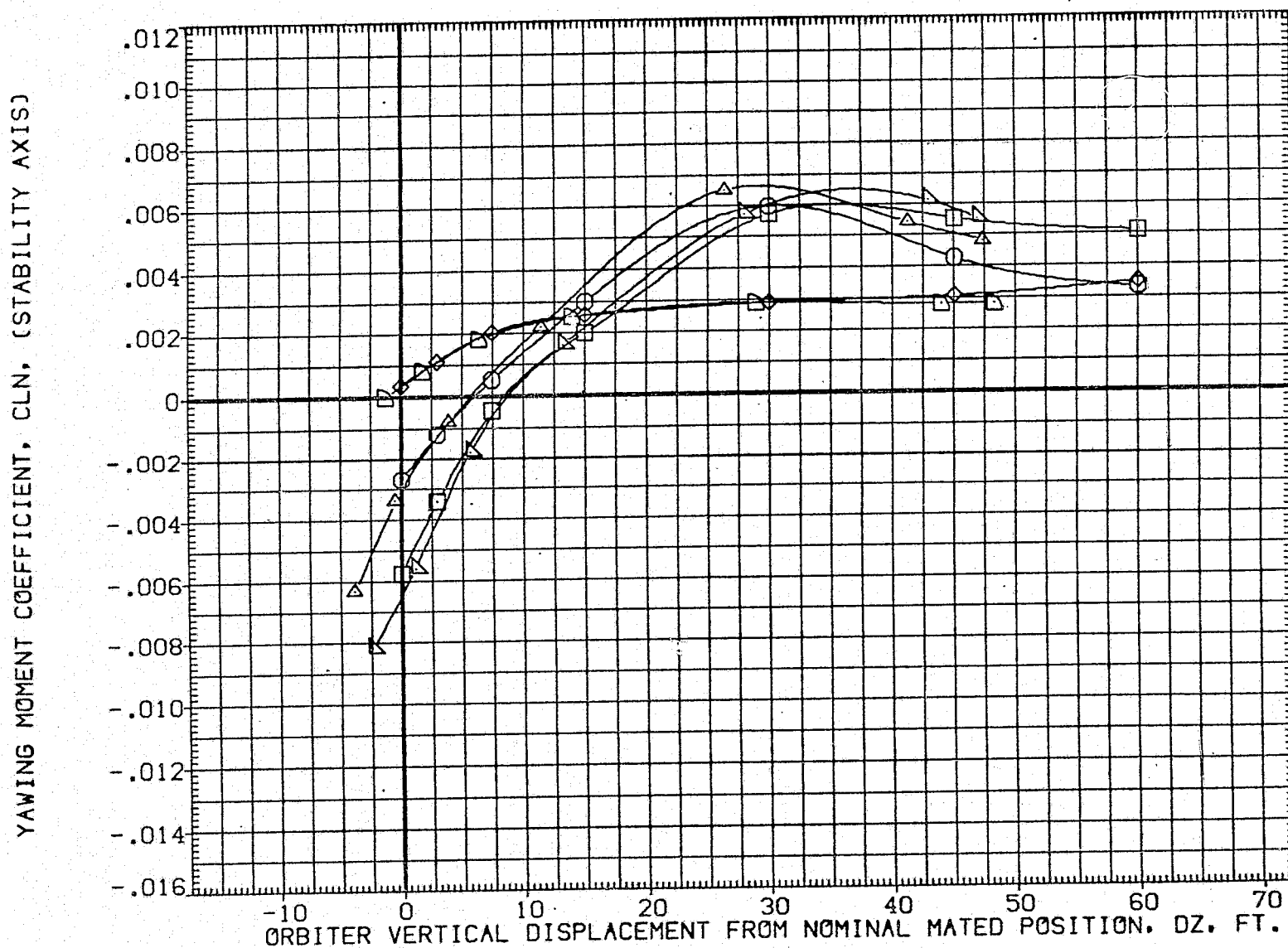


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (A) ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	CARRIER DATA	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION
(IGN061)	CA20 747/1 01 S1 INTERPOLATED	CARRIER DATA	8.000	10.000	10.000	.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED	CARRIER DATA	4.000	10.000	10.000	.000	LREF 327.7800 IN.
(IGN053)	CA20 747/1 01 S1 INTERPOLATED	CARRIER DATA	4.000	.000	10.000	.000	BREF 2348.0400 IN.
(FGN061)	CA20 747/1 01 S1 UNINTERPOLATED	CARRIER DATA	8.000	10.000	10.000	.000	XMRP 1339.9000 IN.XC
(FGN059)	CA20 747/1 01 S1 UNINTERPOLATED	CARRIER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.YC
(FGN053)	CA20 747/1 01 S1 UNINTERPOLATED	CARRIER DATA	4.000	.000	10.000	.000	ZMRP 190.8000 IN.ZC
							SCALE .0300

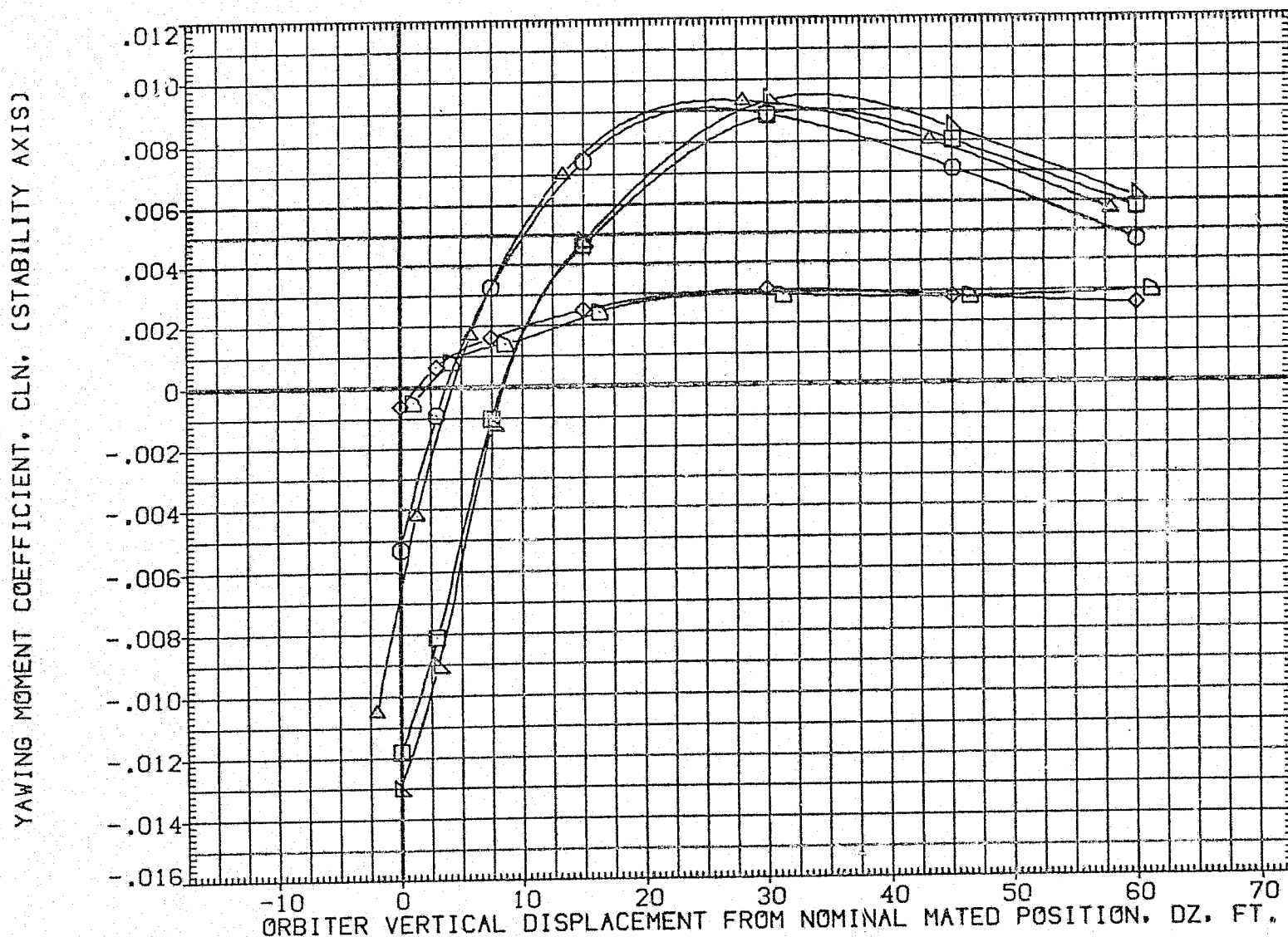


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
(B)ALPHA0= 14.00

DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION	
(IGN061)	□	CA20 747/1 01 S1	INTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	SREF	5500.0000 SQ.FT.
(IGN059)	◇	CA20 747/1 01 S1	INTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	LREF	327.7800 IN.
(IGN053)	◇	CA20 747/1 01 S1	INTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	BREF	2348.0400 IN.
(FGN061)	△	CA20 747/1 01 S1	UNINTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	XMRP	1339.9000 IN.XC
(FGN059)	△	CA20 747/1 01 S1	UNINTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	YMRP	.0000 IN.YC
(FGN053)	△	CA20 747/1 01 S1	UNINTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	ZMRP	190.8000 IN.ZC
								SCALE	.0300

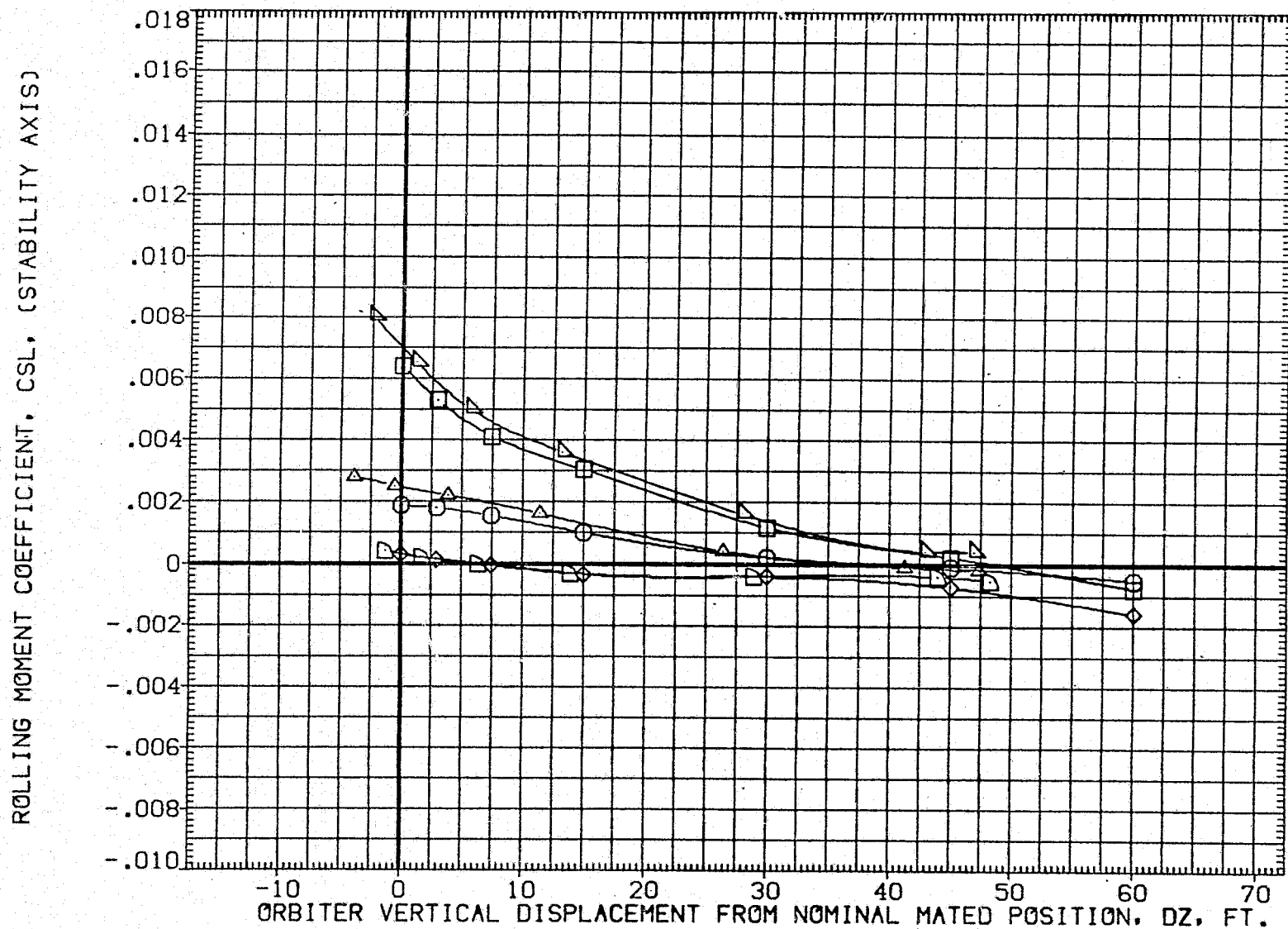


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
(A)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	OX	BETA0	REFERENCE INFORMATION		
(IGN061)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	SREF	5500.0000	SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	LREF	327.7800	IN.
(IGN053)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	BREF	2348.0400	IN.
(FGN061)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	8.000	10.000	10.000	.000	XMRP	1339.9000	IN.XC
(FGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	10.000	10.000	.000	YMRP	.0000	IN.YC
(FGN053)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	4.000	.000	10.000	.000	ZMRP	190.8000	IN.ZC
						SCALE	.0300	

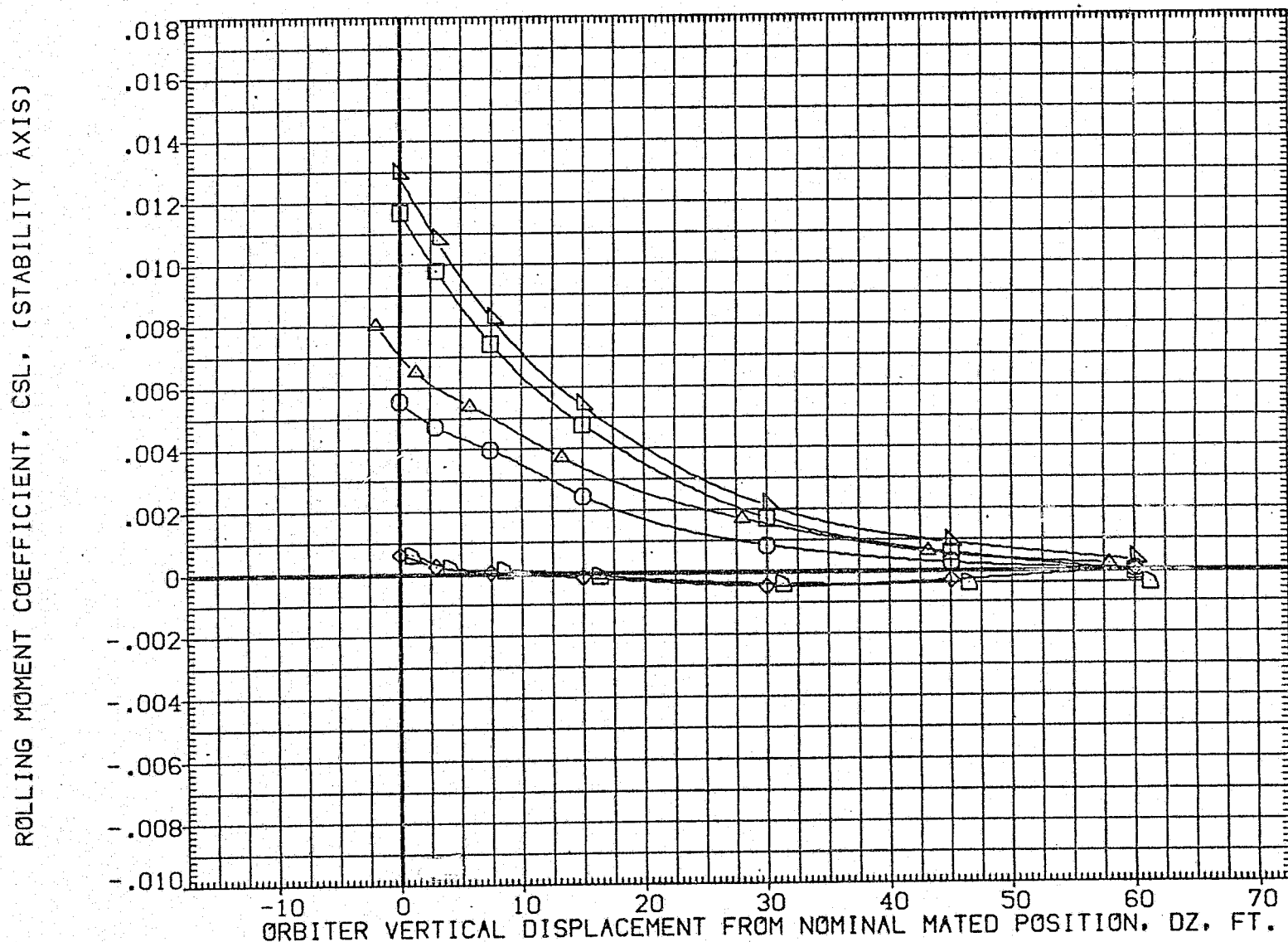


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
(B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(IGN112)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	LREF 327.7800 IN.
(IGN089)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	BREF 2348.0400 IN.
(EGN112)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	XMRP 1339.9000 IN.XC
(EGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.YC
(EGN089)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	ZMRP 190.8000 IN.ZC
						SCALE .0300

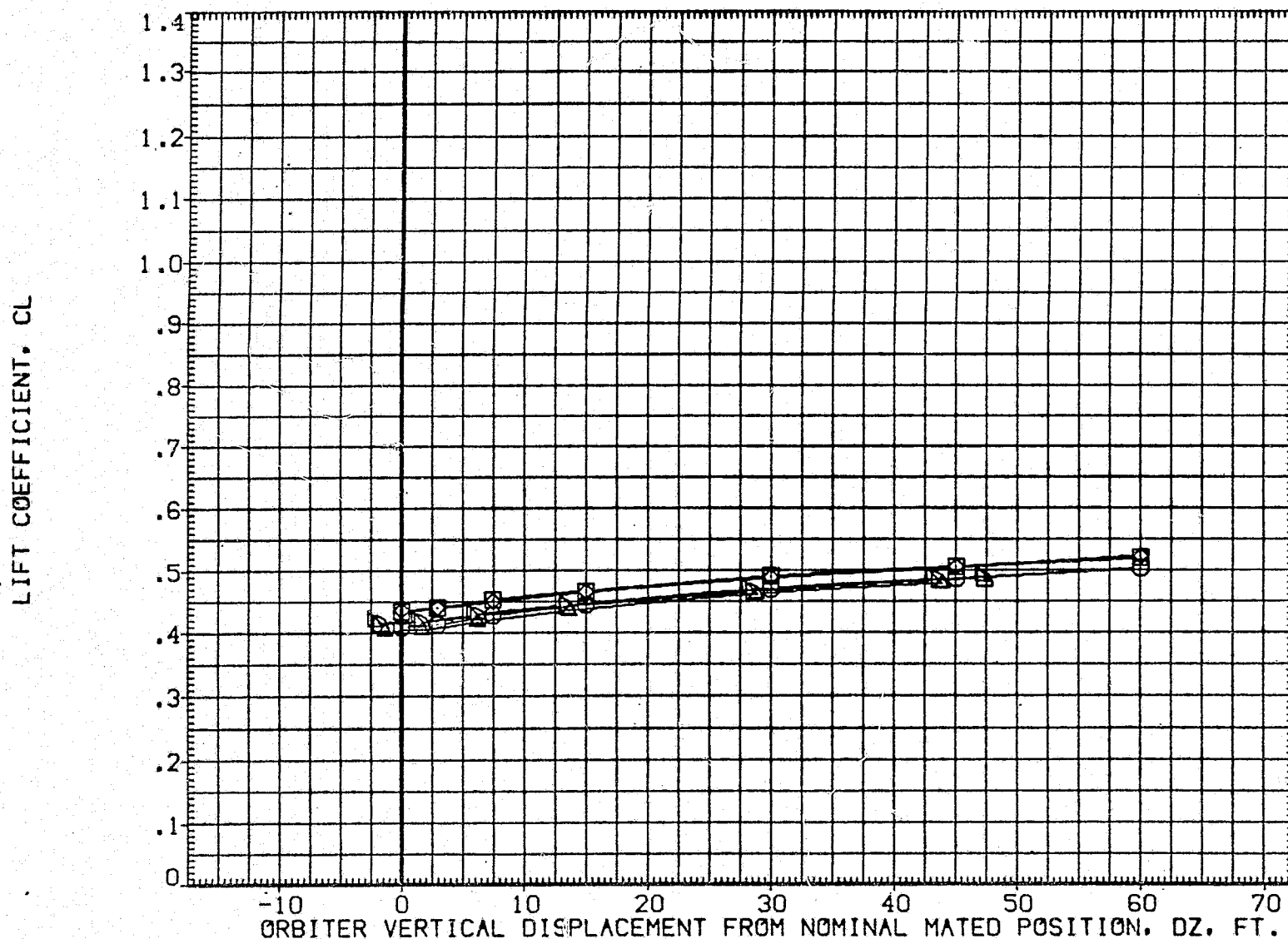


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (A) ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION		
(IGN112)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	SREF	5500.0000	SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	LREF	327.7800	IN.
(IGN089)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	BREF	2348.0400	IN.
(EGN112)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	XMRP	1339.5000	IN.XC
(EGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	YMRP	.0000	IN.YC
(EGN089)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	ZMRP	190.8000	IN.ZC
						SCALE	.0300	

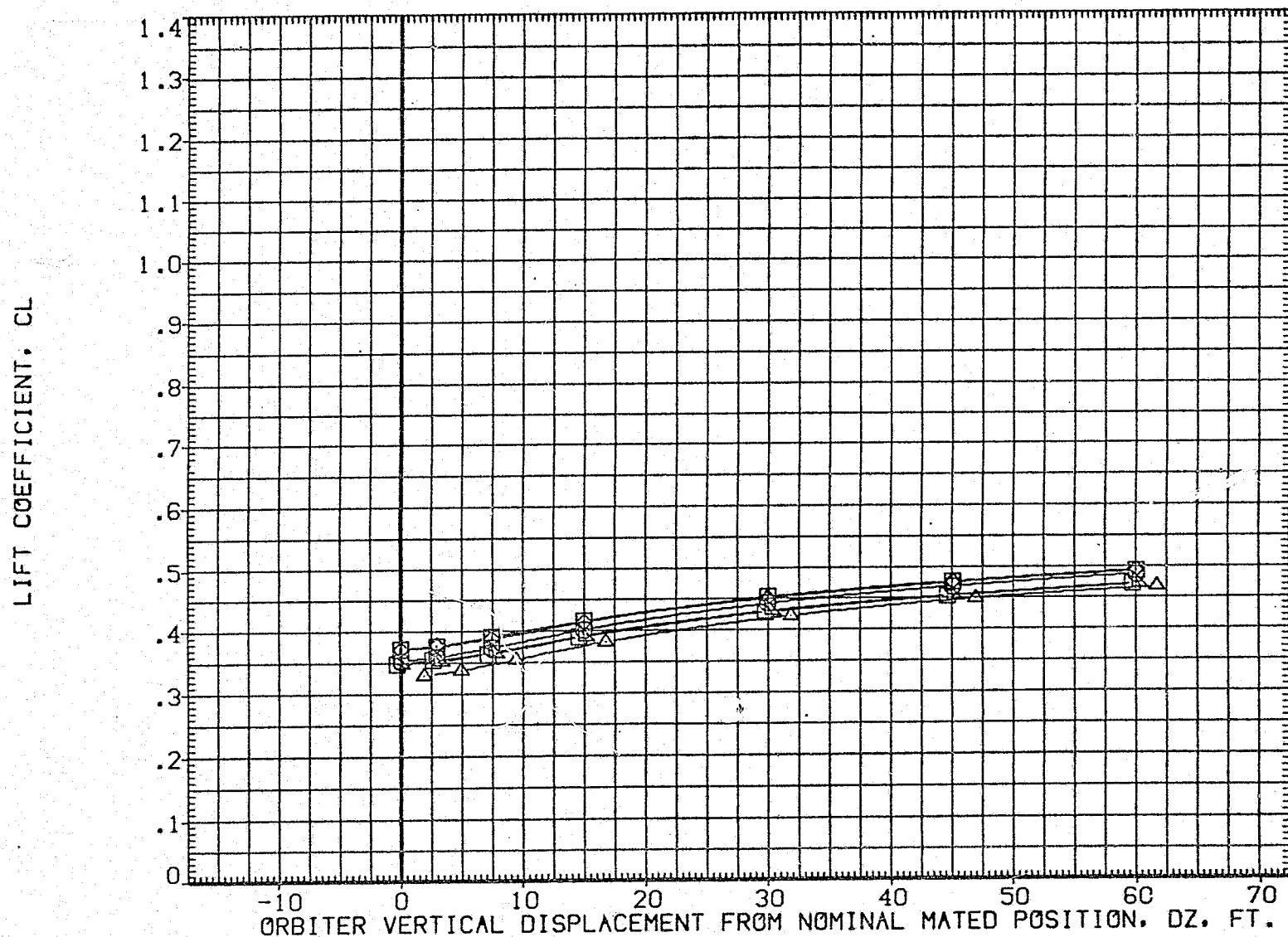


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION		
(IGN112)	CA20	747/1 01 S1 INTERPOLATED	.000	.000	4.000	10.000	SREF	5500.0000	50.FT.
(IGN059)	CA20	747/1 01 S1 INTERPOLATED	.000	.000	4.000	10.000	LREF	327.7800	IN.
(IGN089)	CA20	747/1 01 S1 INTERPOLATED	.000	7.500	4.000	10.000	BREF	2348.0400	IN.
(EGN112)	CA20	747/1 01 S1 UNINTERPOLATED	.000	.000	4.000	10.000	XMRP	1339.9000	IN.XC
(EGN059)	CA20	747/1 01 S1 UNINTERPOLATED	.000	.000	4.000	10.000	YMRP	.0000	IN.YC
(EGN089)	CA20	747/1 01 S1 UNINTERPOLATED	.000	7.500	4.000	10.000	ZMRP	190.8000	IN.ZC
							SCALE	.0300	

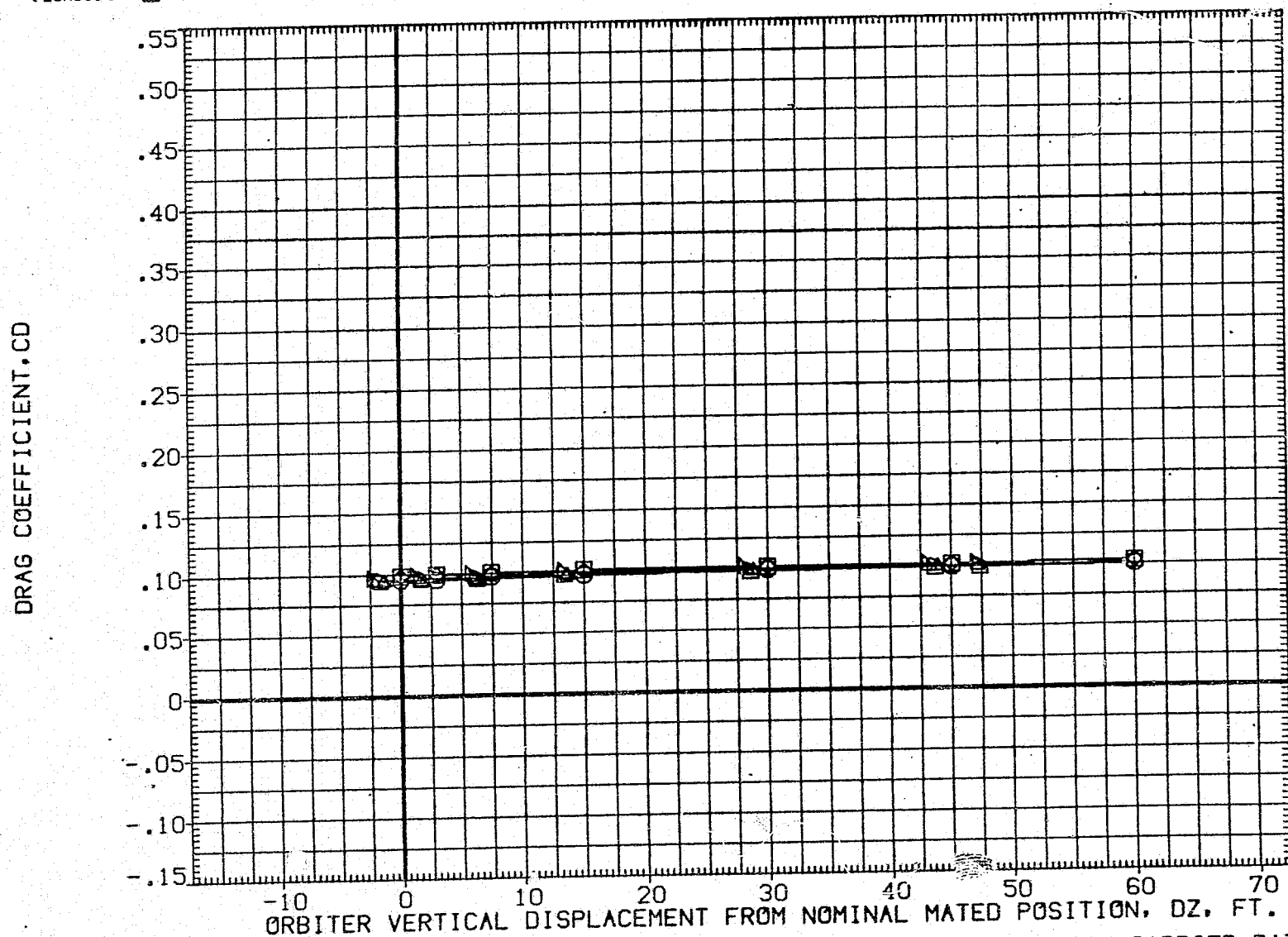


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (A) ALPHAC = 10.00

DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION		
(IGN112)	○	CA20	747/1 01 S1 INTERPOLATED	.000	.000	4.000	10.000	SREF	5500.0000	50.FT.
(IGN059)	□	CA20	747/1 01 S1 INTERPOLATED	.000	.000	4.000	10.000	LREF	327.7800	IN.
(IGN089)	×	CA20	747/1 01 S1 INTERPOLATED	.000	7.500	4.000	10.000	BREF	-2348.0400	IN.
(EGN112)	△	CA20	747/1 01 S1 UNINTERPOLATED	.000	.000	4.000	10.000	XMRP	1339.9000	IN.XC
(EGN059)	▽	CA20	747/1 01 S1 UNINTERPOLATED	.000	.000	4.000	10.000	YMRP	.0000	IN.YC
(EGN089)	◇	CA20	747/1 01 S1 UNINTERPOLATED	.000	7.500	4.000	10.000	ZMRP	190.8000	IN.ZC
									SCALE	.0300

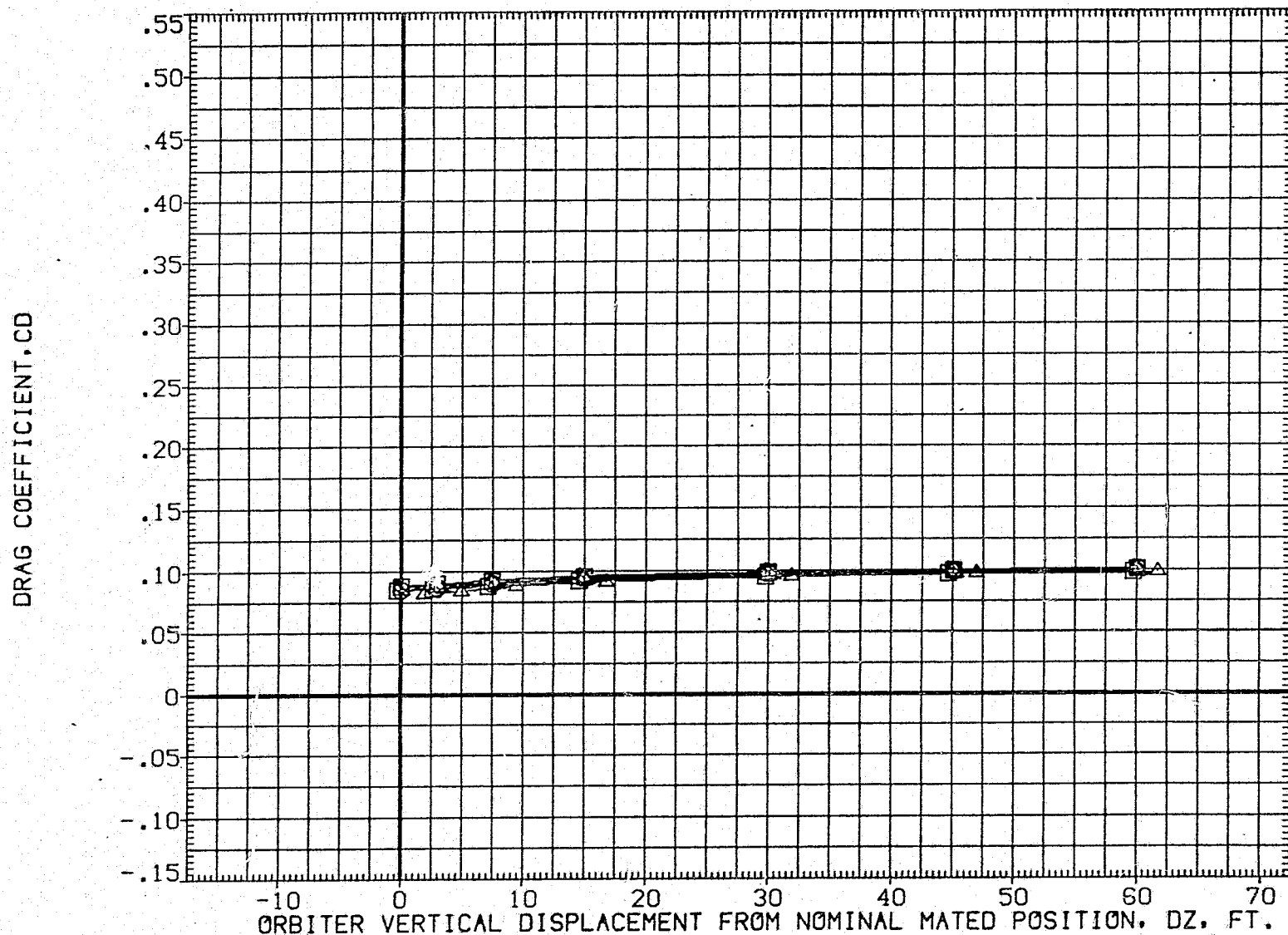


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION		
(IGN112)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	SREF	5500.0000	50.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	LREF	327.7800	IN.
(IGN089)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	BREF	2348.0400	IN.
(EGN112)	CA20 747/1 31 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	XMRP	1339.9000	IN.XC
(EGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	YMRP	.0000	IN.YC
(EGN089)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	ZMRP	190.8000	IN.ZC
						SCALE	.0300	

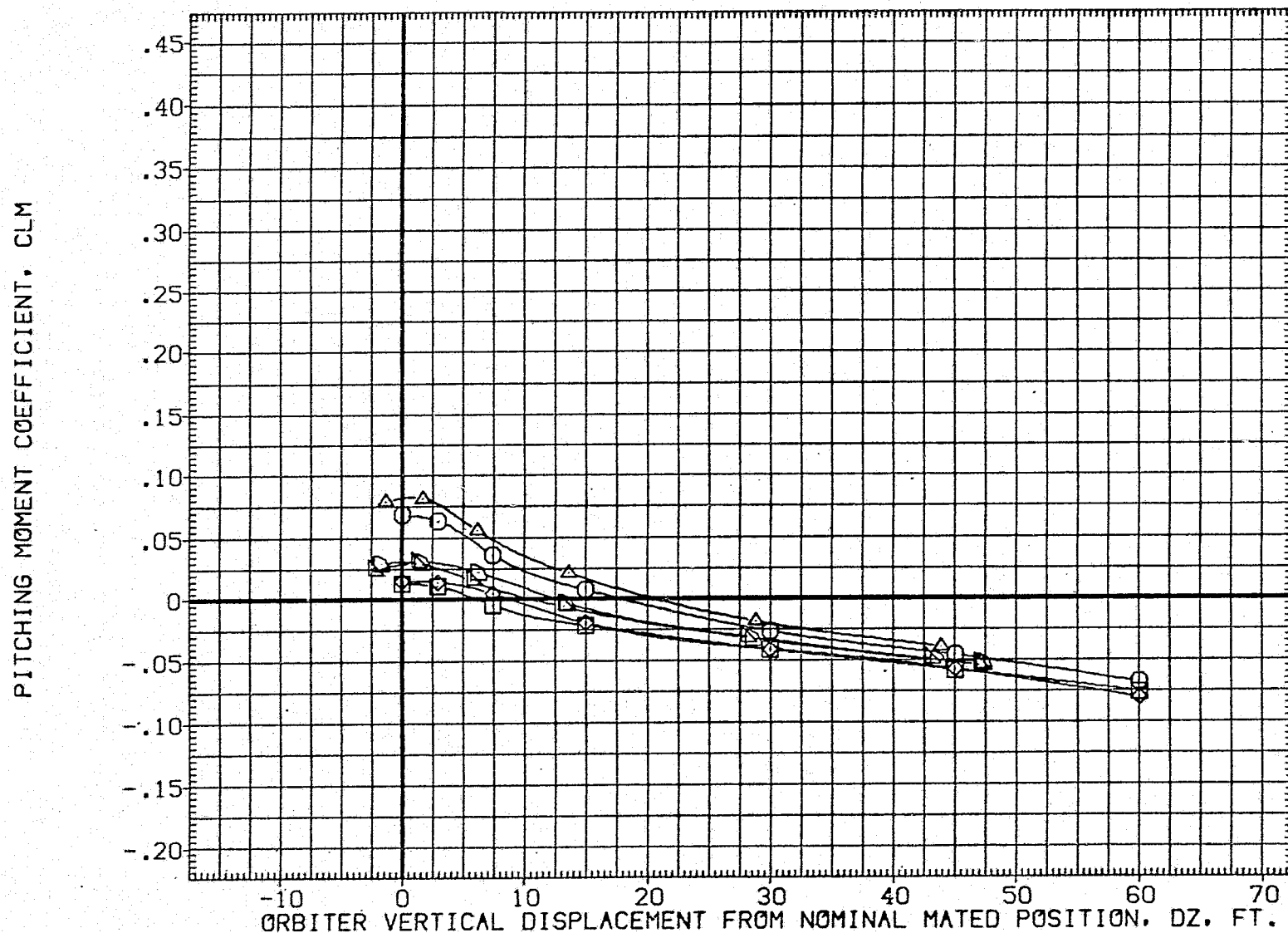


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA

(A)ALPHAC= 10.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(IGN112)	CA20	747/1 01 S1 INTERPOLATED	.000	.000	4.000	10.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20	747/1 01 S1 INTERPOLATED	.000	.000	4.000	10.000	LREF 327.7800 IN.
(IGN089)	CA20	747/1 01 S1 INTERPOLATED	.000	7.500	4.000	10.000	BREF 2348.0400 IN.
(EGN112)	CA20	747/1 01 S1 UNINTERPOLATED	.000	.000	4.000	10.000	XMRP 1339.9000 IN.XC
(EGN059)	CA20	747/1 01 S1 UNINTERPOLATED	.000	.000	4.000	10.000	YMRP .0000 IN.YC
(EGN089)	CA20	747/1 01 S1 UNINTERPOLATED	.000	7.500	4.000	10.000	ZMRP 190.8000 IN.ZC
							SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

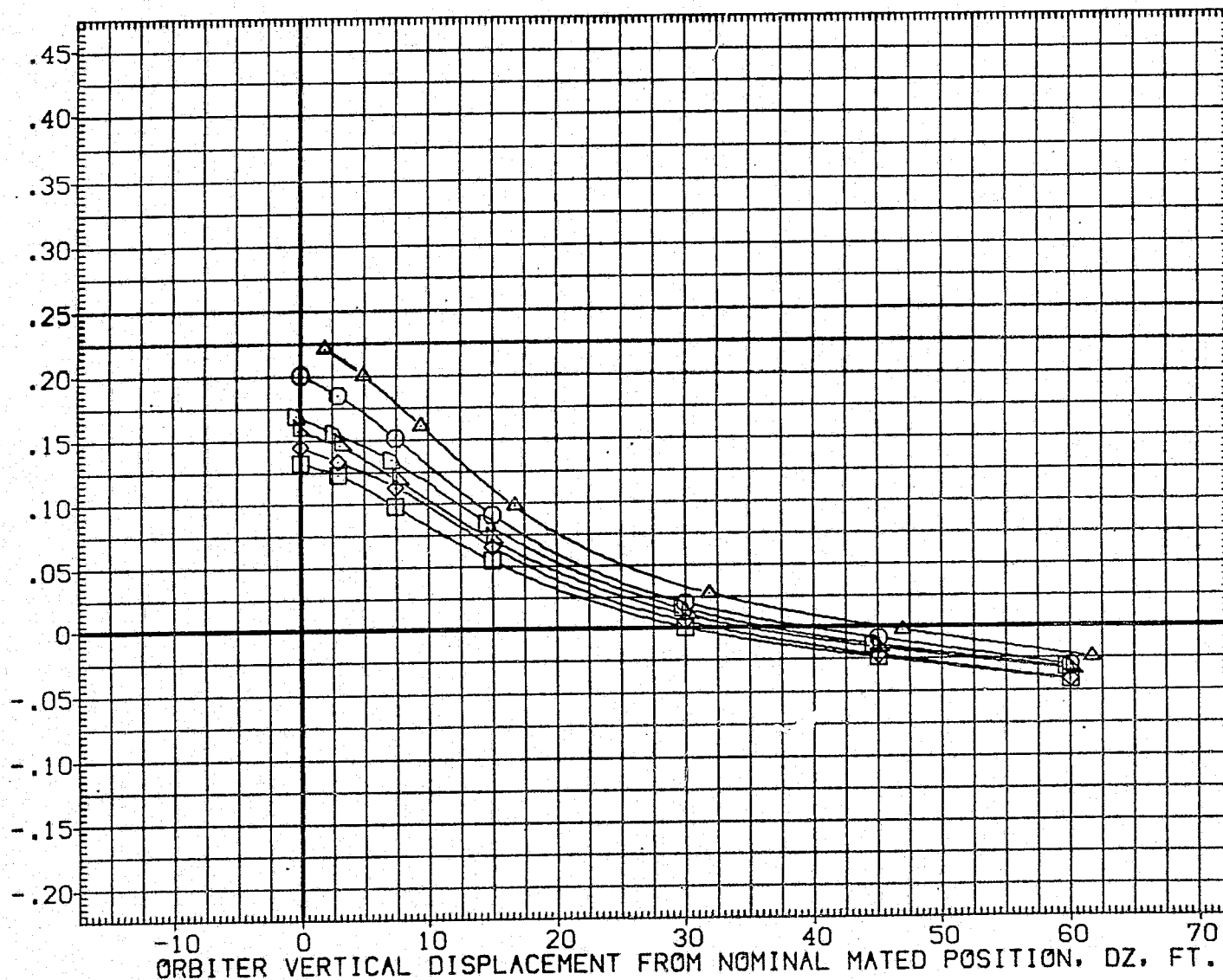


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
(B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(IGN112)	CA20	747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20	747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	LREF 327.7800 IN.
(IGN089)	CA20	747/1 01 S1 INTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	BREF 2348.0400 IN.
(FGN112)	CA20	747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	XMRP 1339.9000 IN.XC
(FGN059)	CA20	747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.YC
(FGN089)	CA20	747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	ZMRP 190.8000 IN.ZC
							SCALE .0300

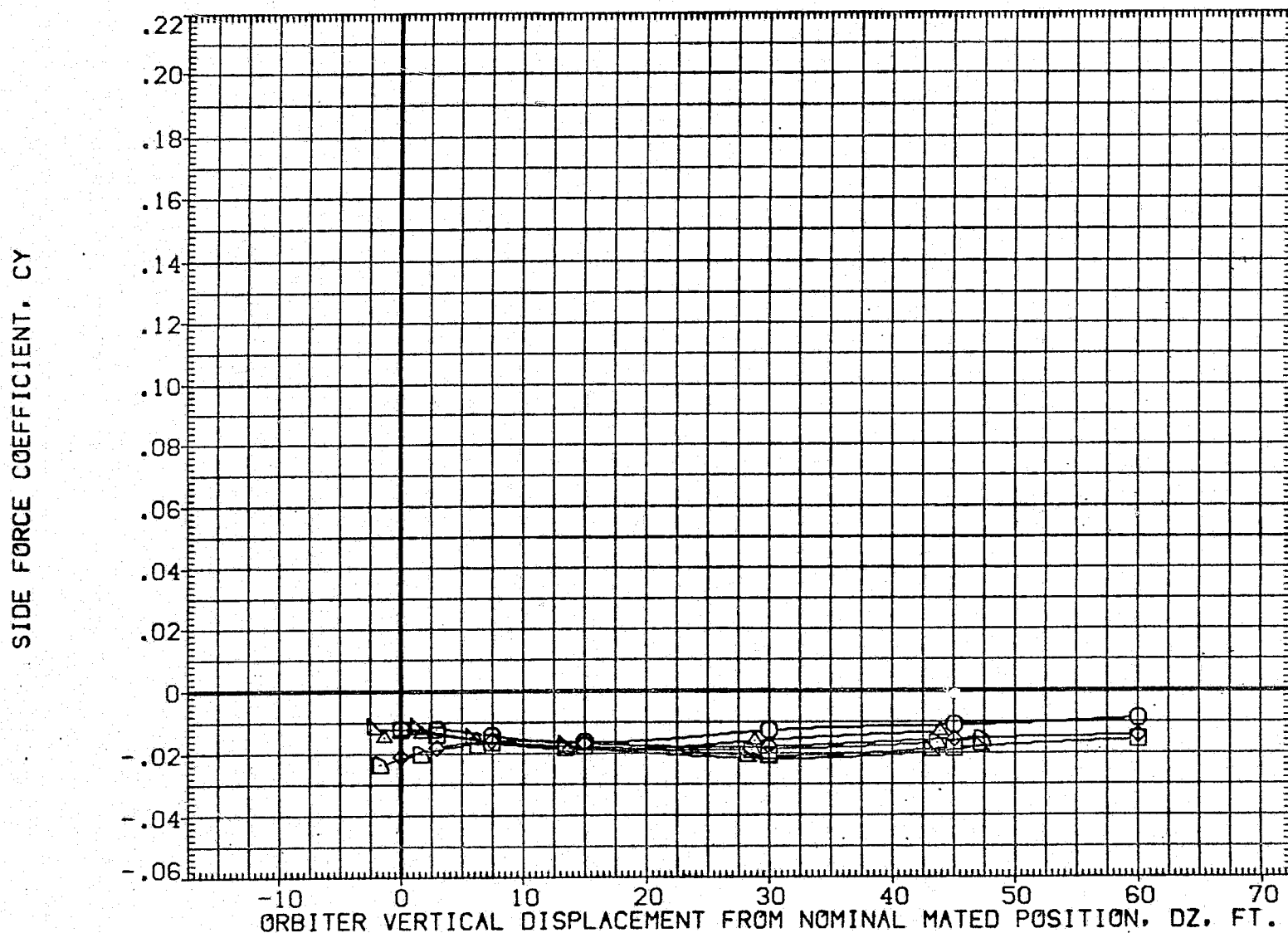


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA

(A)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(IGN112)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	LREF 327.7800 IN.
(IGN089)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	BREF 2348.0400 IN.
(FGN112)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	XMRP 1339.9000 IN.XC
(FGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.YC
(FGN089)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	ZMRP 190.8000 IN.ZC
						SCALE .0300

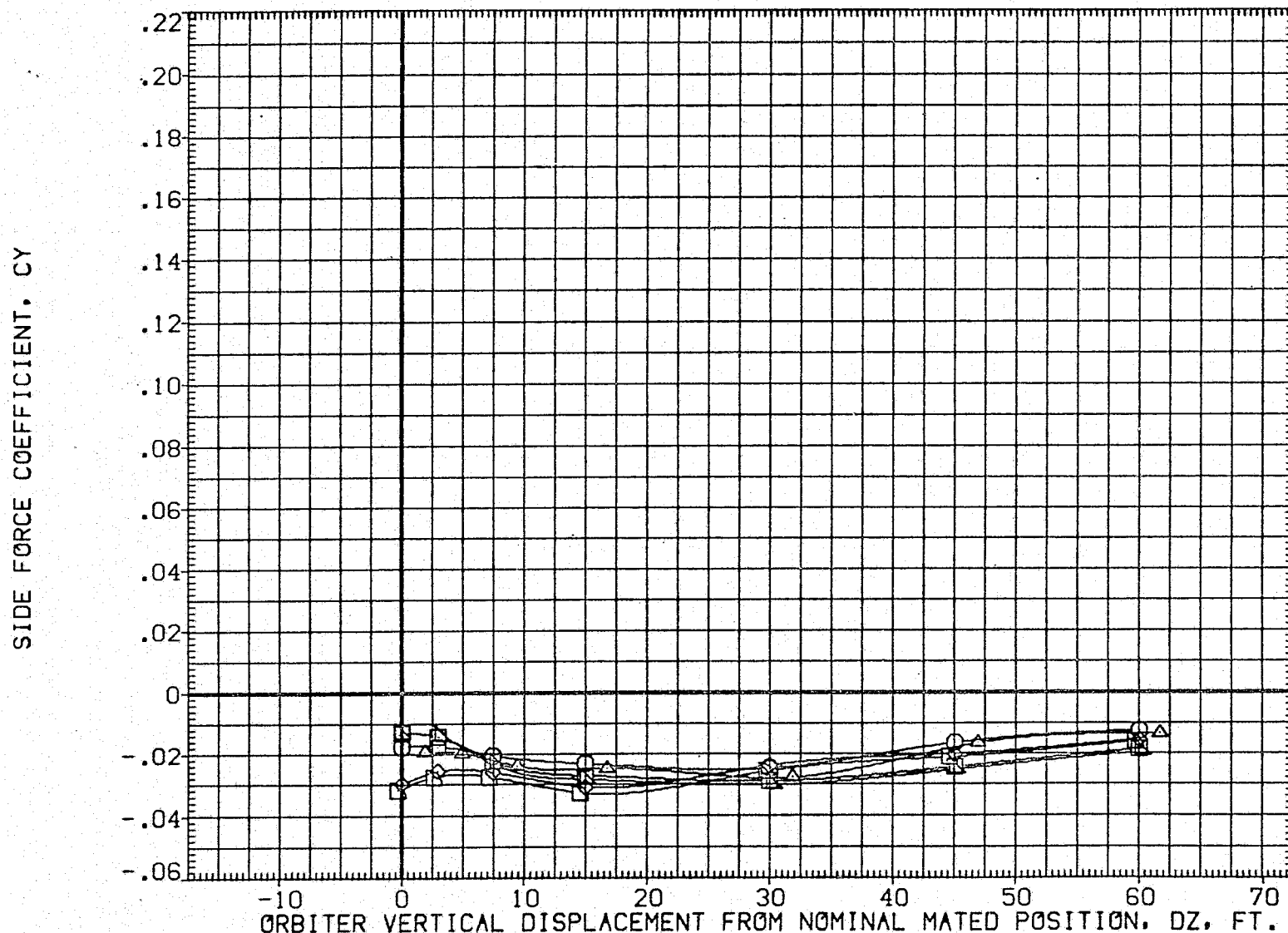


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	OY	REFERENCE INFORMATION
(IGN112)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	LREF 327.7800 IN.
(IGN089)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	BREF 2348.0400 IN.
(FGN112)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	XMRP 1339.9000 IN.XC
(FGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.YC
(FGN089)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	ZMRP 190.8000 IN.ZC
						SCALE .0300

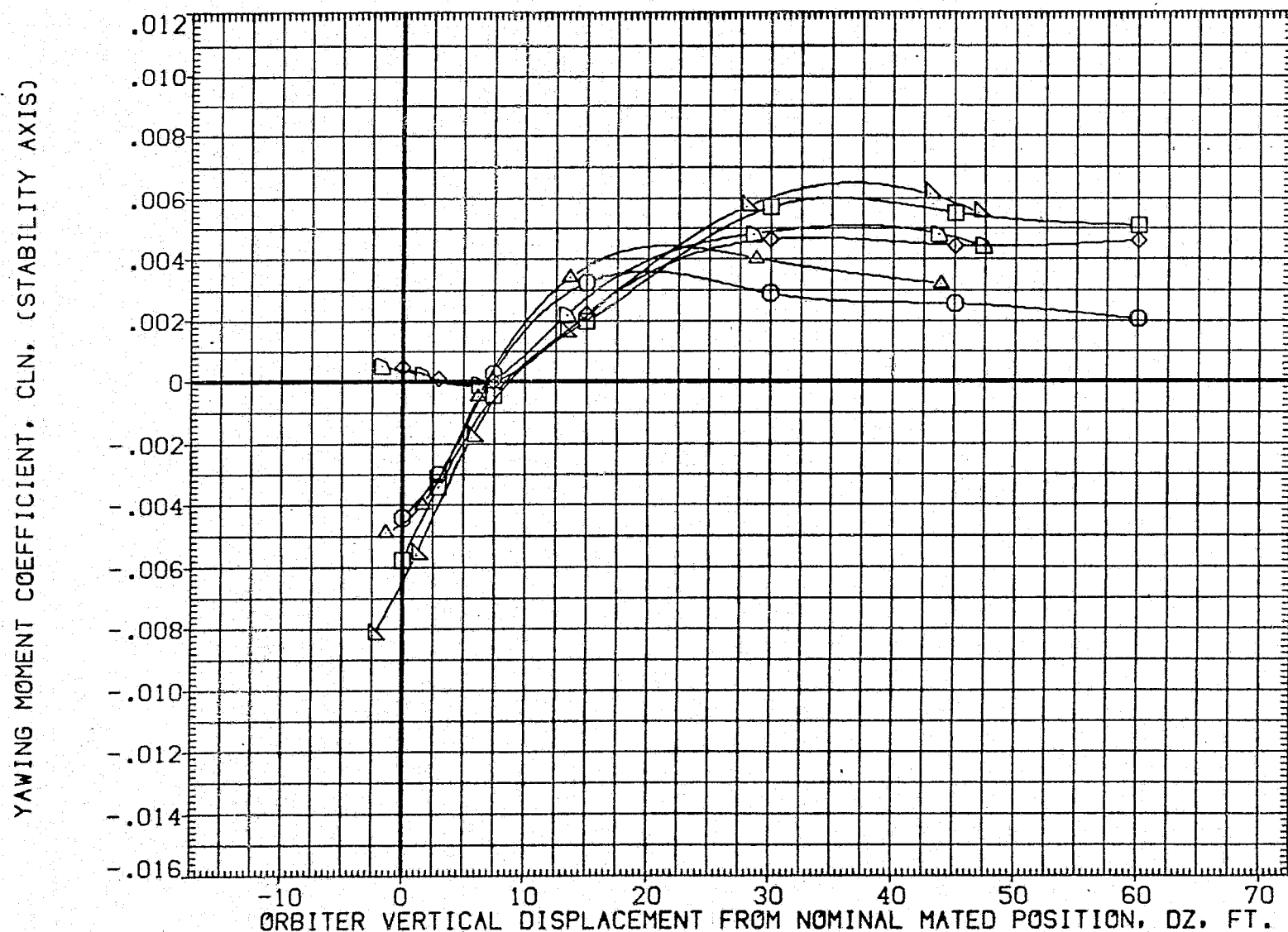


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (A)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(IGN112)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	SREF 5500.0000 SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	LREF 327.7800 IN.
(IGN089)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	BREF 2348.0400 IN.
(FGN112)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	XMRP 1339.9000 IN.XC
(FGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.YC
(FGN089)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	ZMRP 190.8000 IN.ZC
						SCALE .0300



FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (B)ALPHA0= 14.00

DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION		
(IGN112)	□	CA20 747/1 01 S1	INTERPOLATED	.000	.000	4.000	10.000	SREF	5500.0000	SQ.FT.
(IGN059)	□	CA20 747/1 01 S1	INTERPOLATED	.000	.000	4.000	10.000	LREF	327.7800	IN.
(IGN089)	×	CA20 747/1 01 S1	INTERPOLATED	.000	7.500	4.000	10.000	BREF	2348.0400	IN.
(FGN112)	△	CA20 747/1 01 S1	UNINTERPOLATED	.000	.000	4.000	10.000	XMRP	1339.9000	IN.XC
(FGN059)	△	CA20 747/1 01 S1	UNINTERPOLATED	.000	.000	4.000	10.000	YMRP	.0000	IN.YC
(FGN089)	△	CA20 747/1 01 S1	UNINTERPOLATED	.000	7.500	4.000	10.000	ZMRP	190.8000	IN.ZC
								SCALE	.0300	

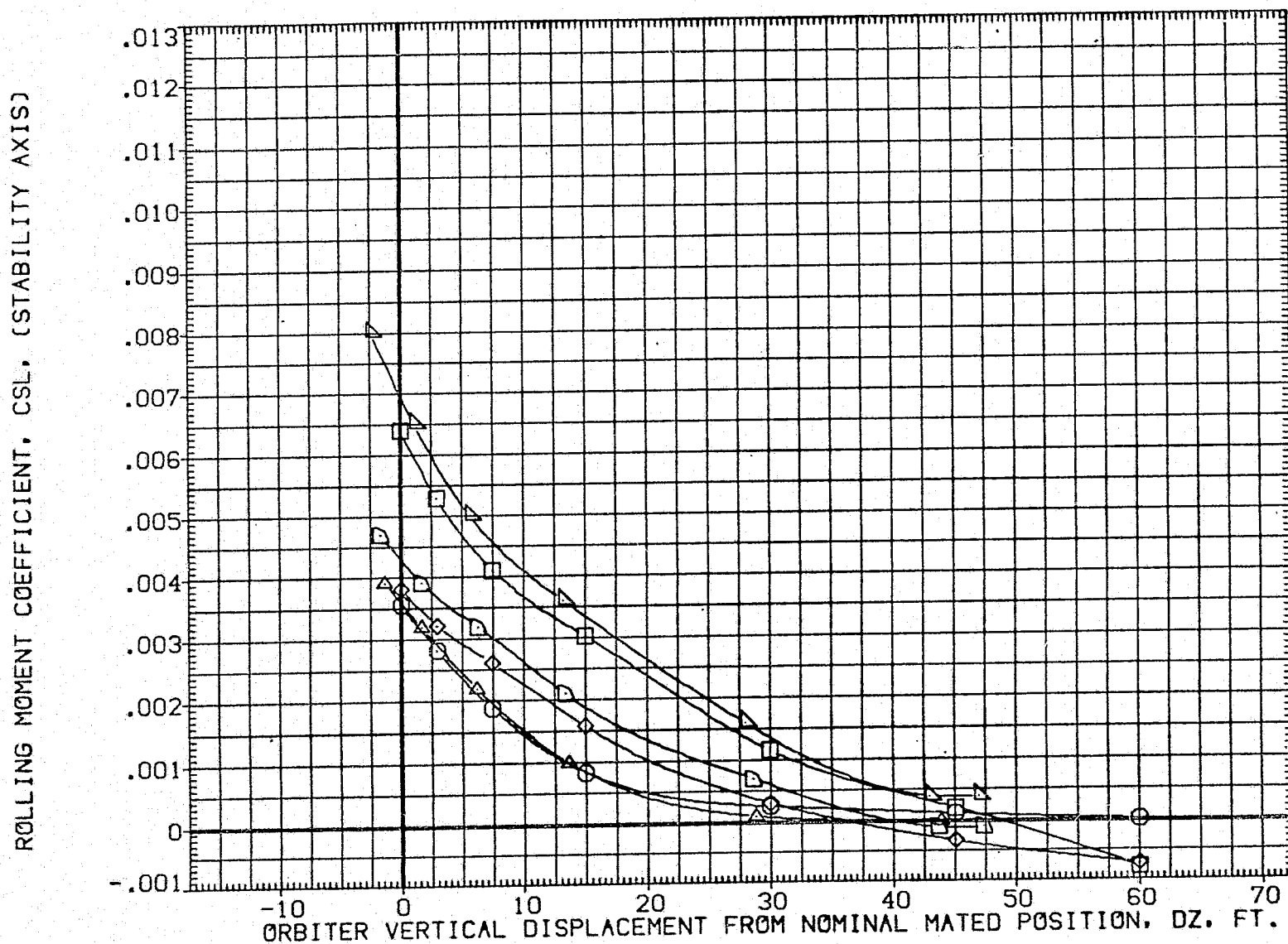


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA
 (A) ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION		
(IGN112)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	SREF	5500.0000	SQ.FT.
(IGN059)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	LREF	327.7800	IN.
(IGN089)	CA20 747/1 01 S1 INTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	BREF	2348.0400	IN.
(FGN112)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	XMRP	1339.9000	IN.XC
(FGN059)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	.000	4.000	10.000	YHRP	.0000	IN.YC
(FGN089)	CA20 747/1 01 S1 UNINTERPOLATED CARRIER DATA	.000	7.500	4.000	10.000	ZMRP	190.8000	IN.ZC
						SCALE	.0300	

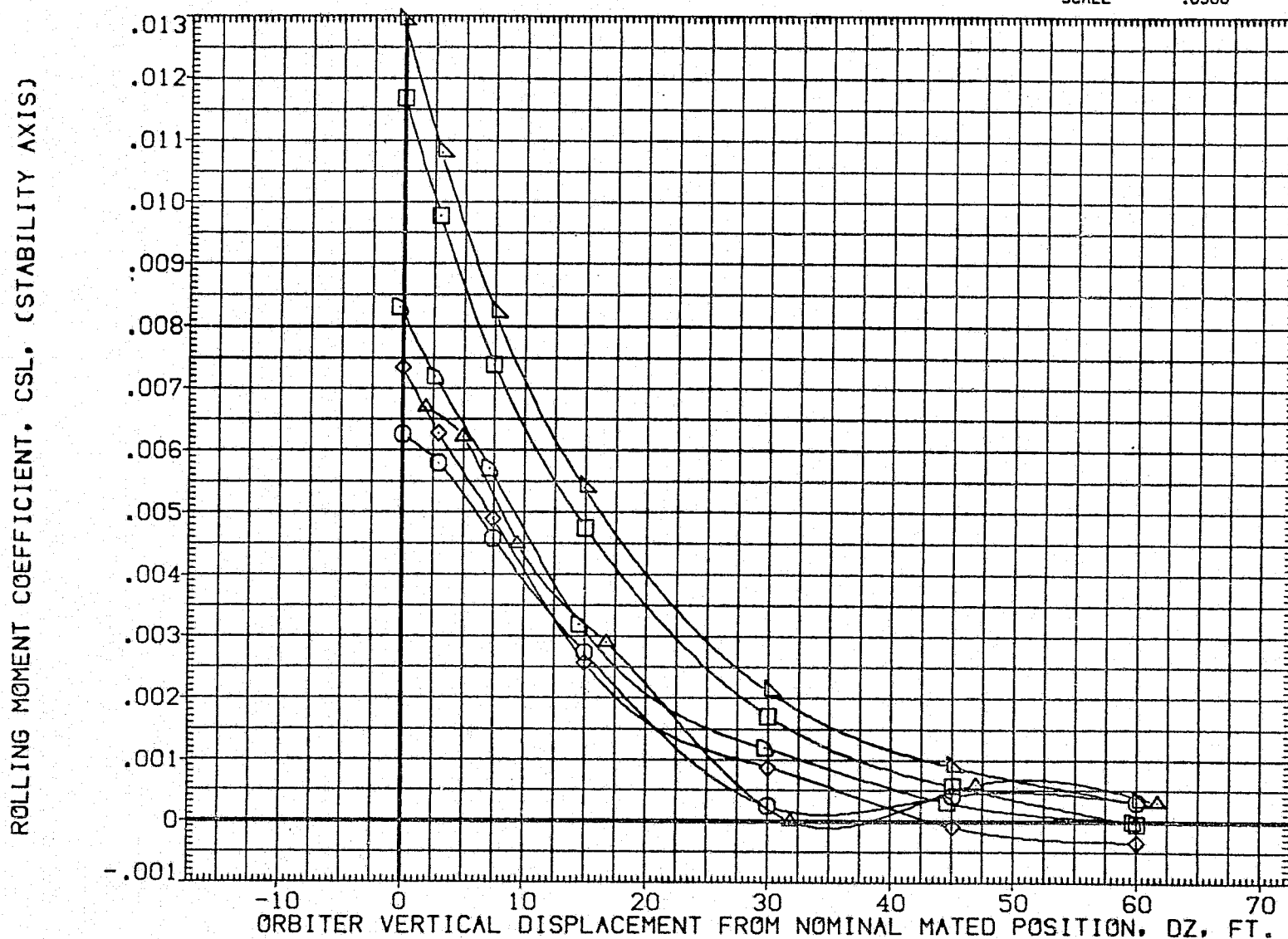


FIG 22 COMPARISON BETWEEN INTERPOLATED (MGN--- DATASETS) AND RAW CARRIER DATA

(B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	DX	BETA0	REFERENCE INFORMATION		
(JGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	SREF	2690.0000	50.FT.
(JGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	LREF	474.8100	IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF	936.6800	IN.
(GGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	XMRP	1109.0000	IN.X0
(GGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	YMRP	.0000	IN.Y0
(GGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP	375.0000	IN.Z0
						SCALE	.0300	

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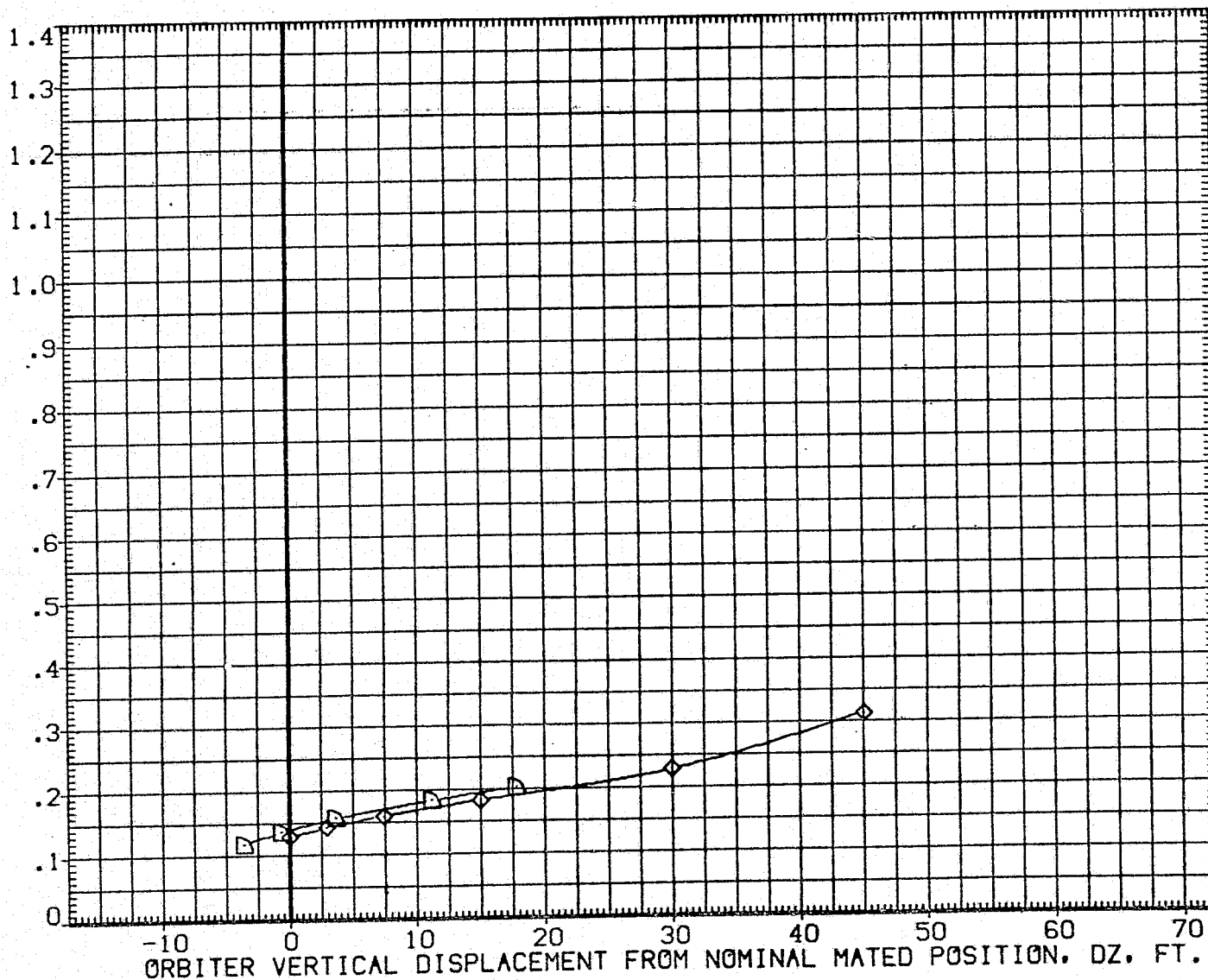


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (A) ALPHA0= 6.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION				ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION		
(JGN061)	CA20	747/1	01	S1	INTERPOLATED	ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20	747/1	01	S1	INTERPOLATED	ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20	747/1	01	S1	INTERPOLATED	ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(GGN061)	CA20	747/1	01	S1	UNINTERPOLATED	ORBITER DATA	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.X0
(GGN059)	CA20	747/1	01	S1	UNINTERPOLATED	ORBITER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.Y0
(GGN053)	CA20	747/1	01	S1	UNINTERPOLATED	ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.Z0
											SCALE .0300

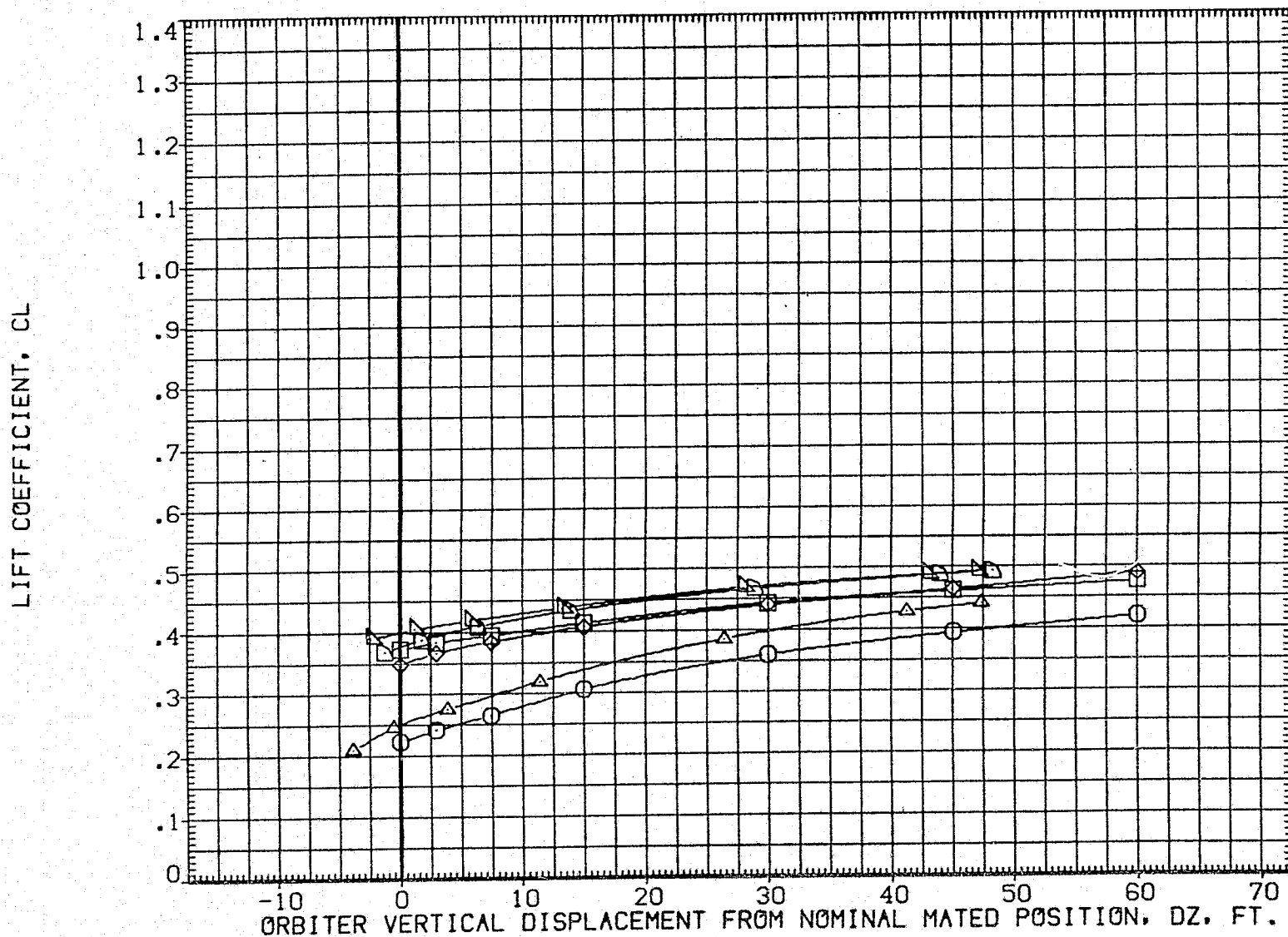


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (B) ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	DX	BETA0	REFERENCE INFORMATION
(JGN061)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(GGN061)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.X0
(GGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.Y0
(GGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.Z0
						SCALE .0300

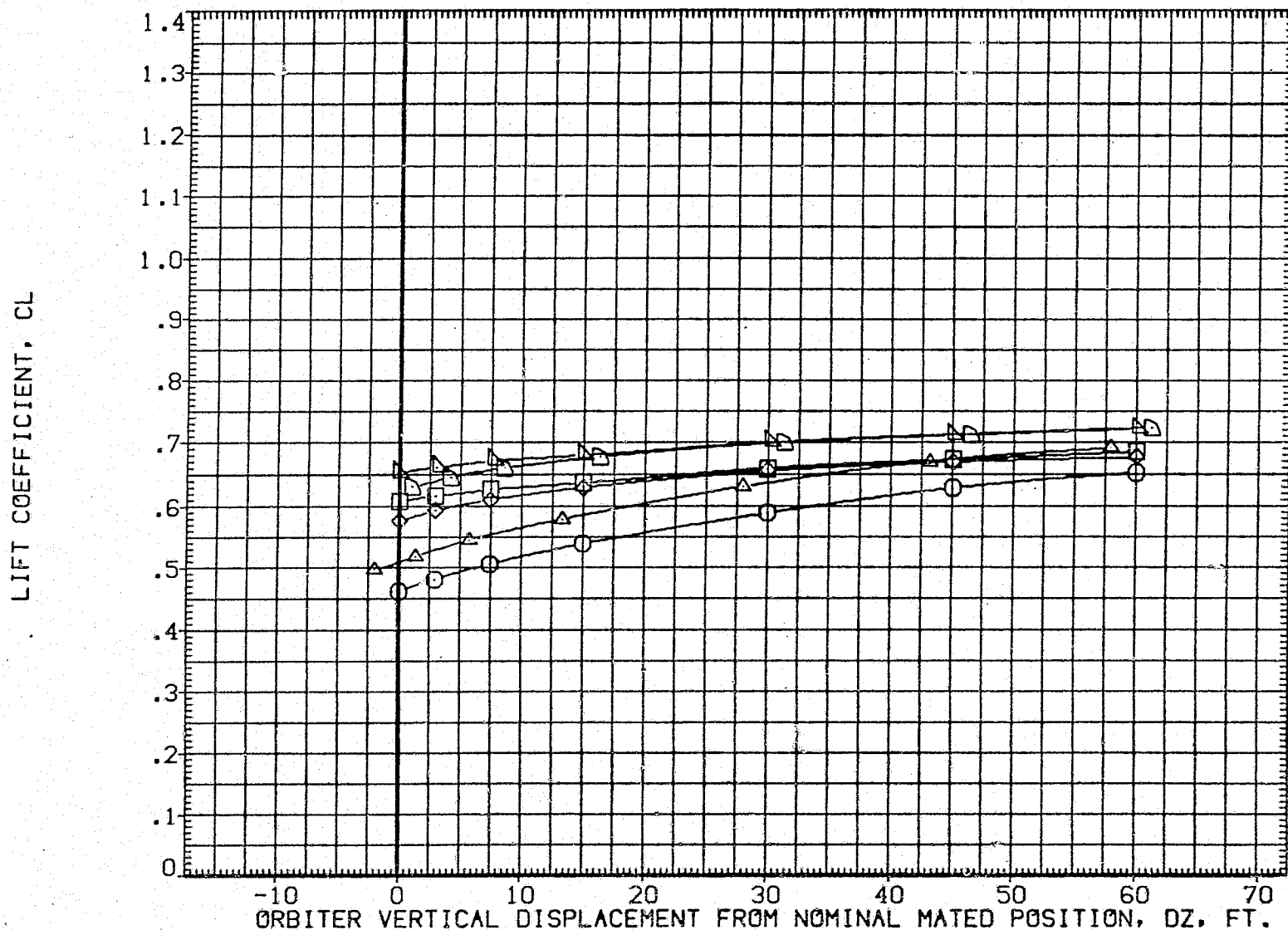


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (C)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	DX	BETA0	REFERENCE INFORMATION		
(JGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	SREF	2690.0000	SQ.FT.
(JGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	LREF	474.8100	IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF	936.6800	IN.
(GGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	XMRP	1109.0000	IN.X0
(GGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	YMRP	.0000	IN.Y0
(GGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP	375.0000	IN.Z0
						SCALE	.0300	

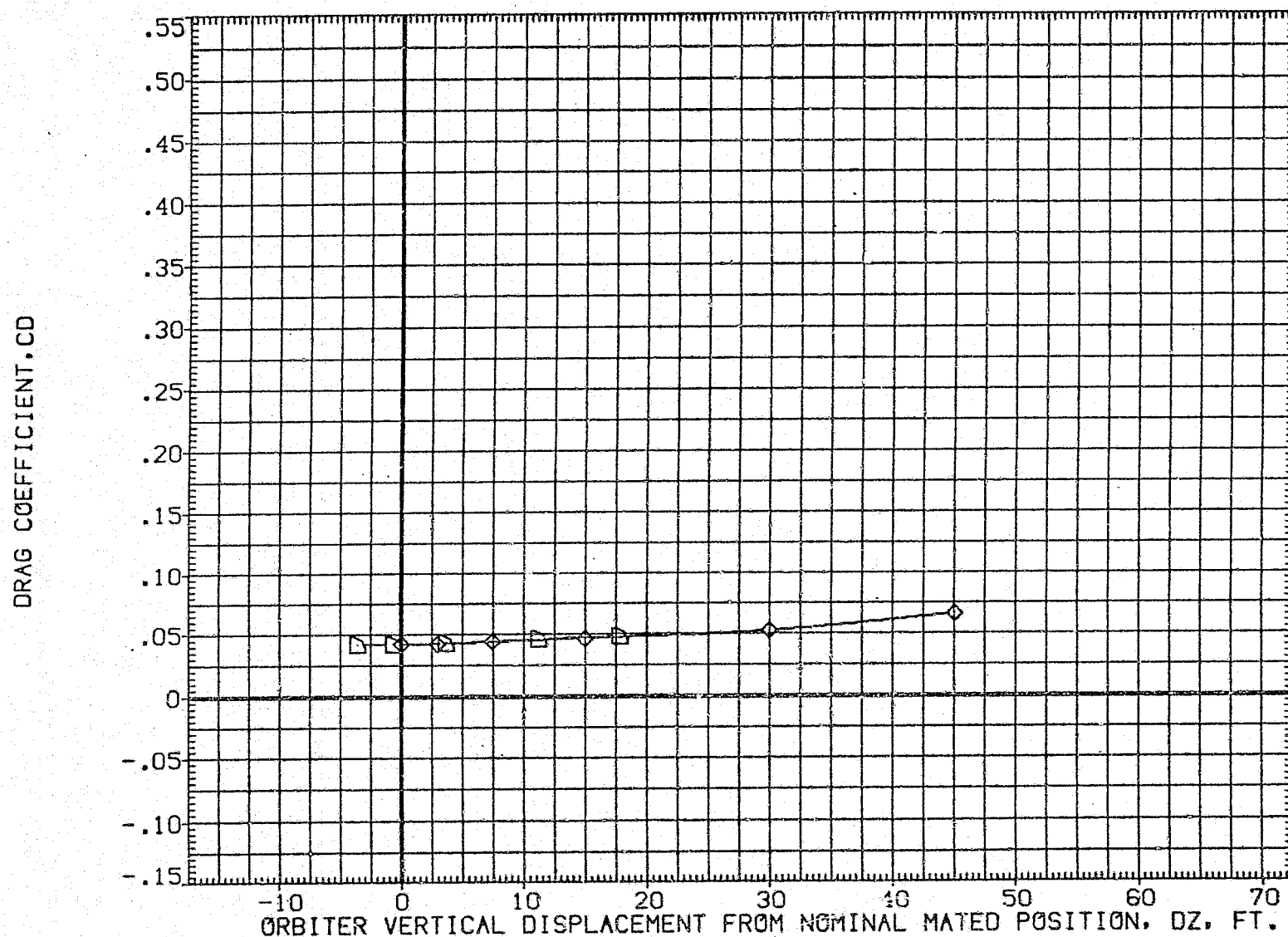


FIG 23 COMPARISON BETWEEN INTERPOLATED (NON--- DATASETS) AND RAW ORBITER DATA
 (A) ALPHA0= 6.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	DX	BETA0	REFERENCE INFORMATION
(JGN061)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(JGN061)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.X0
(GGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.Y0
(GGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.Z0
						SCALE .0300

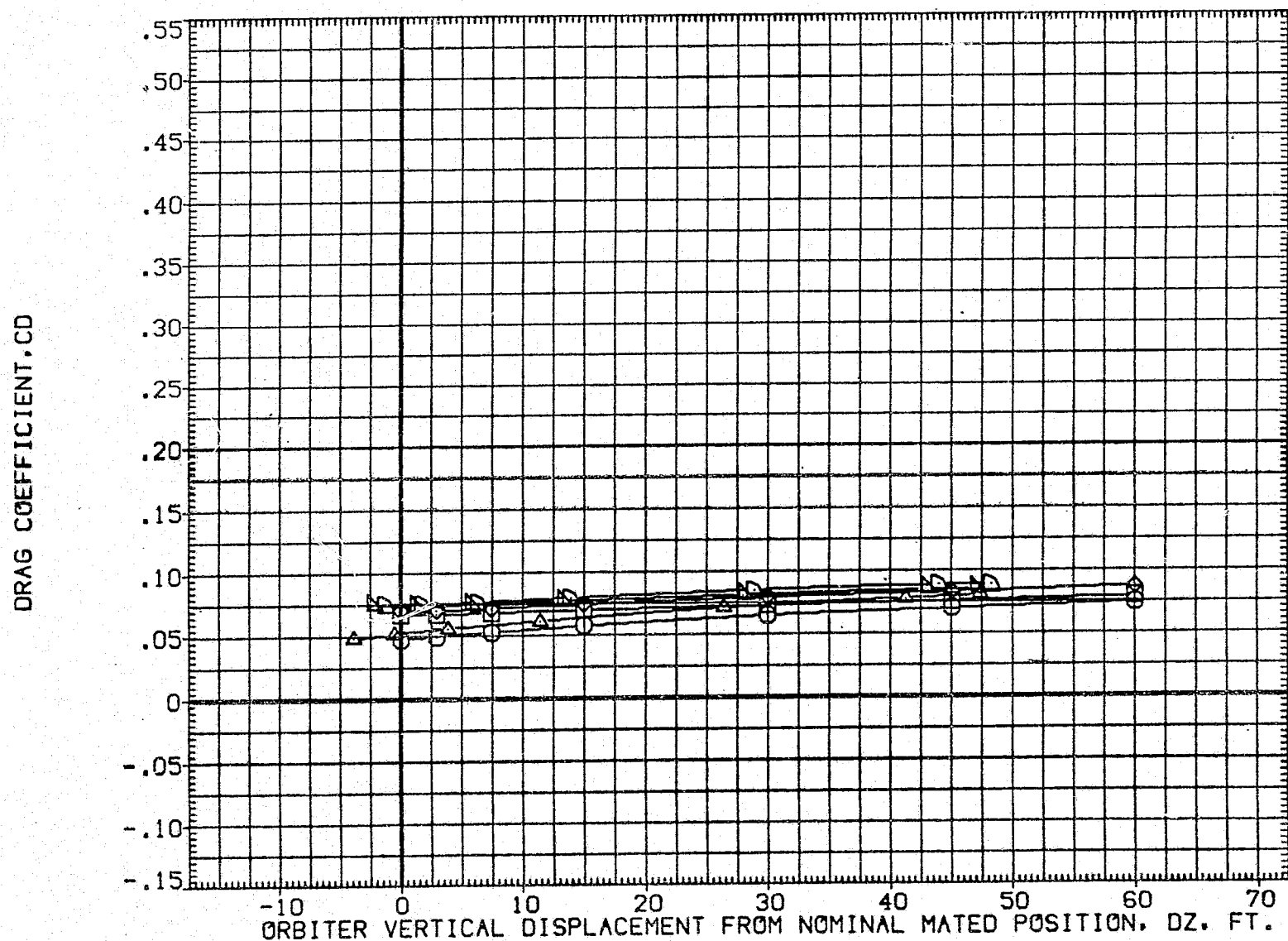


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (B) ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION
(JGN061)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(GGN061)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.X0
(GGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.Y0
(GGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.Z0
						SCALE .0300

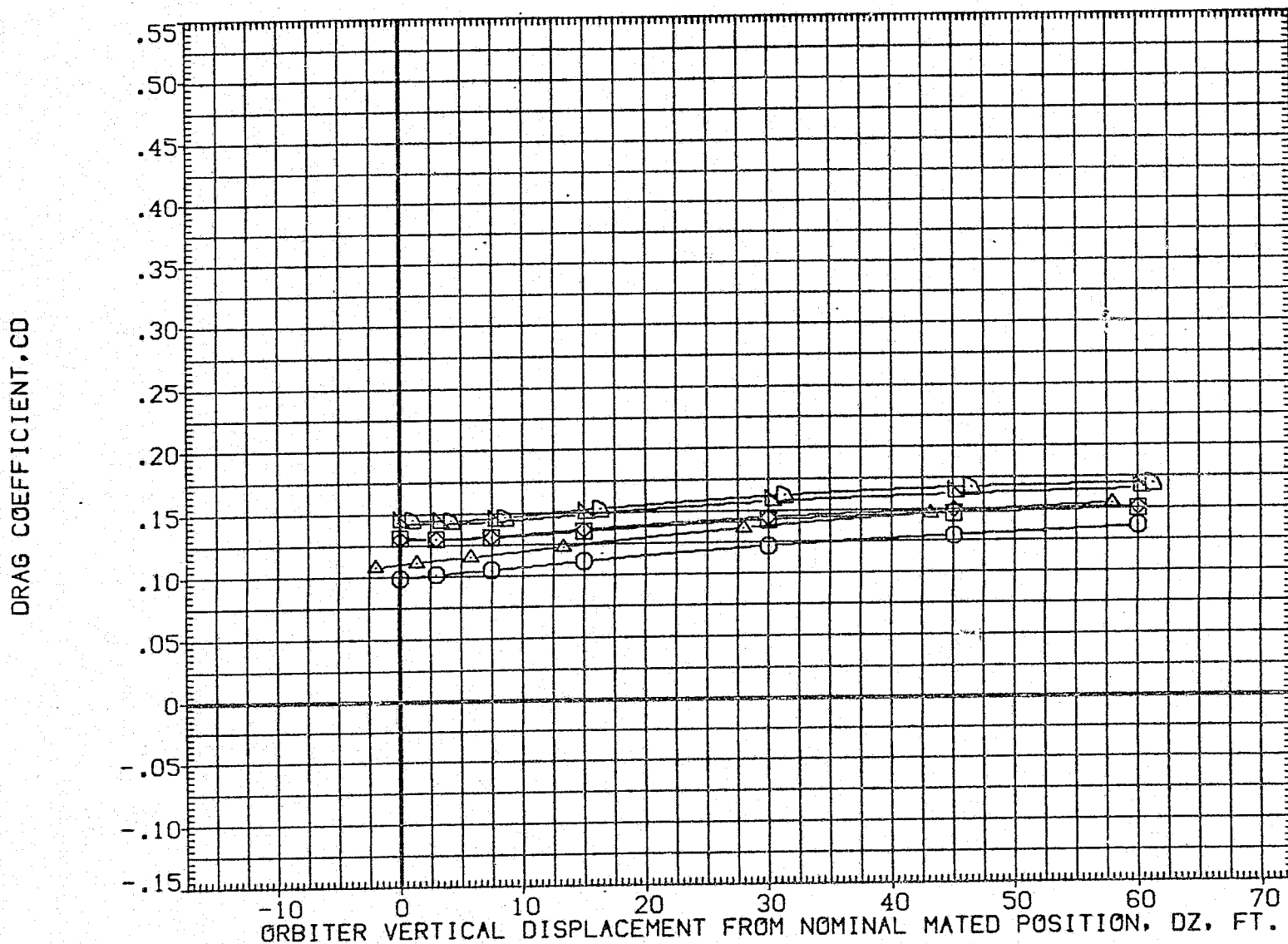


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
(C) ALPHA0 = 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	DX	BETAO	REFERENCE INFORMATION		
(JGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	SREF	2690.0000	SO.FT.
(JGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	LREF	474.8100	IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF	936.6800	IN.
(GGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	XMRP	1109.0000	IN.X0
(GGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	YMRP	.0000	IN.Y0
(GGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP	375.0000	IN.Z0
						SCALE	.0300	

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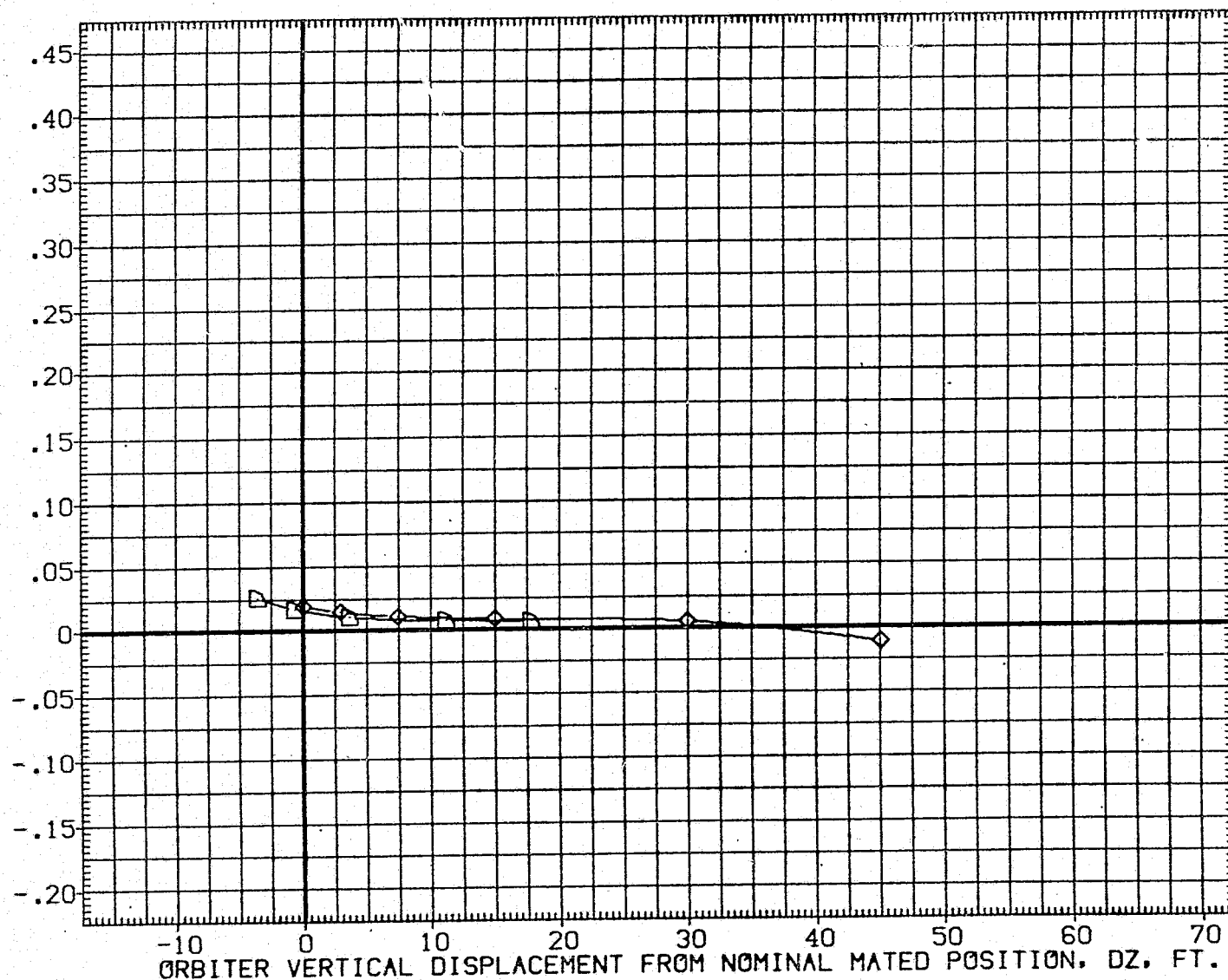


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (A) ALPHA0= 6.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	DX	BETAO	REFERENCE INFORMATION
(JGN081)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(GGN061)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.X0
(GGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.Y0
(GGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.Z0
						SCALE .0300

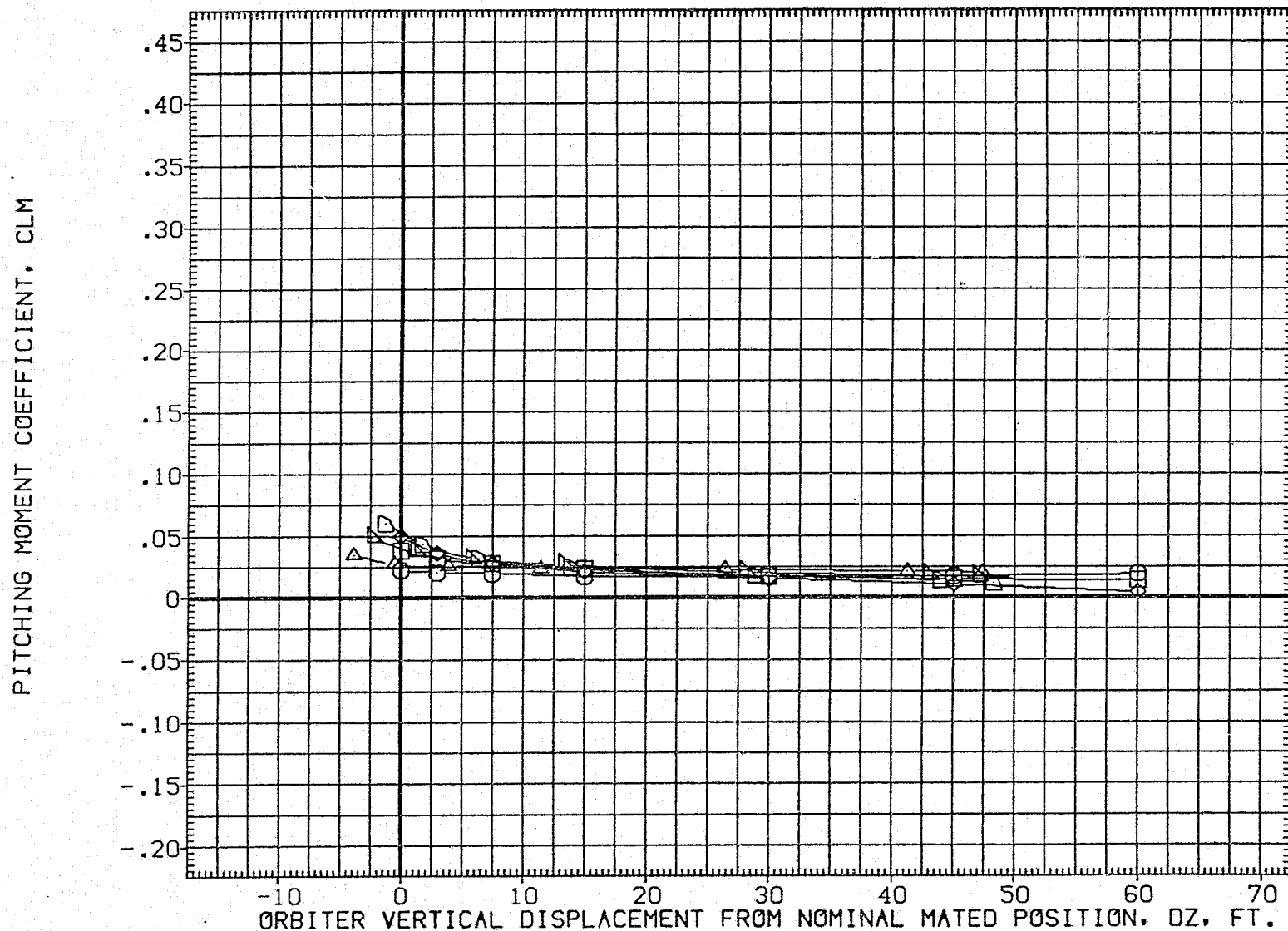


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
(B)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	OX	BETA0	REFERENCE INFORMATION
(JGN061)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SG.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(GGN061)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.X0
(GGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.Y0
(GGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.Z0
						SCALE .0300

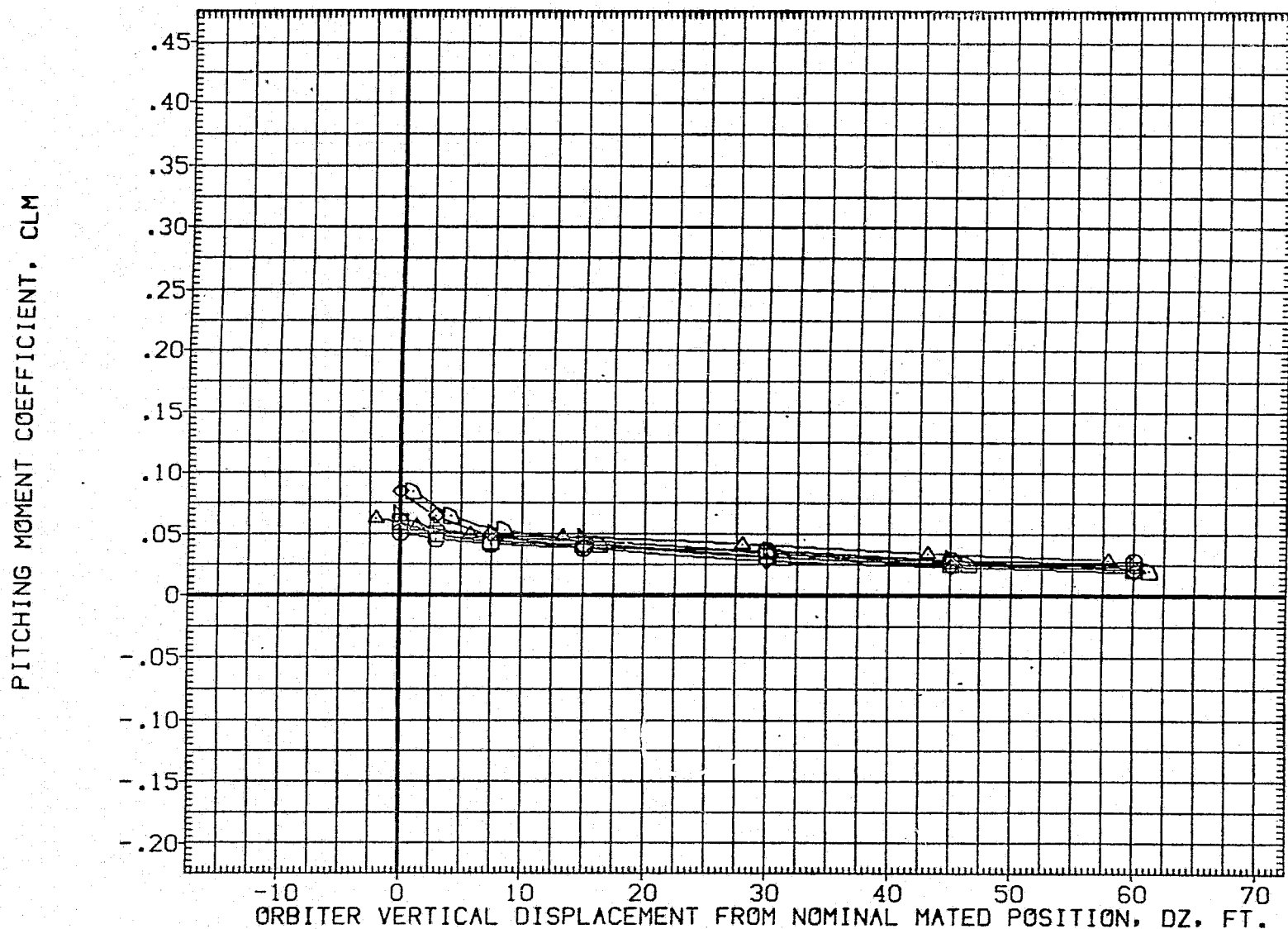


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (C)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	DX	BETA0	REFERENCE INFORMATION		
(JGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	SREF	2690.0000	50.FT.
(JGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	LREF	474.8100	IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF	936.6800	IN.
(HGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	XMRP	1109.0000	IN.X0
(HGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	YMRP	.0000	IN.Y0
(HGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP	375.0000	IN.Z0
						SCALE	.0300	

SIDE FORCE COEFFICIENT, CY

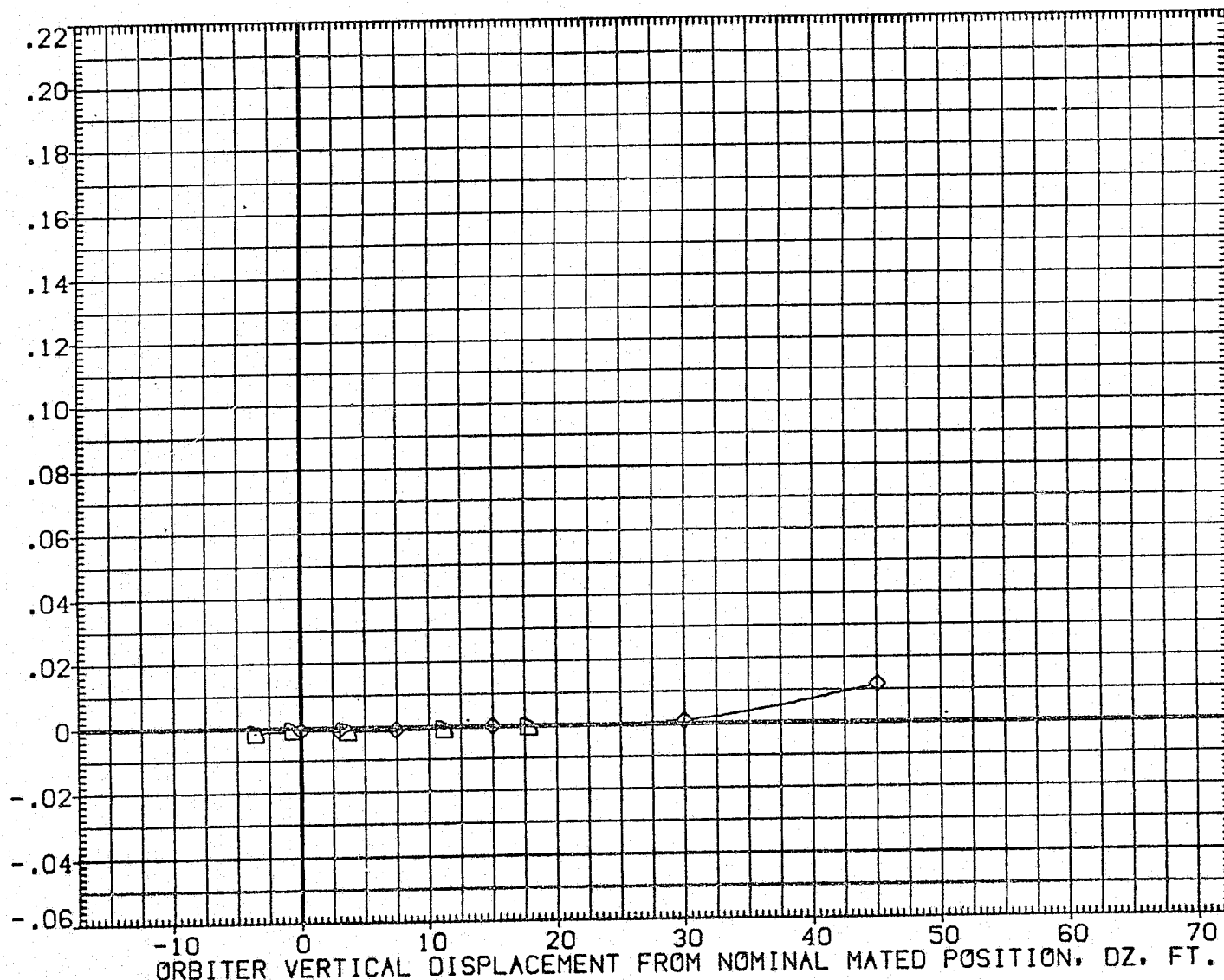


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (A) ALPHA0= 6.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	DY	DX	BETA0	REFERENCE INFORMATION
(JGN061)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(HGN061)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.X0
(HGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.Y0
(HGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.Z0
						SCALE .0300

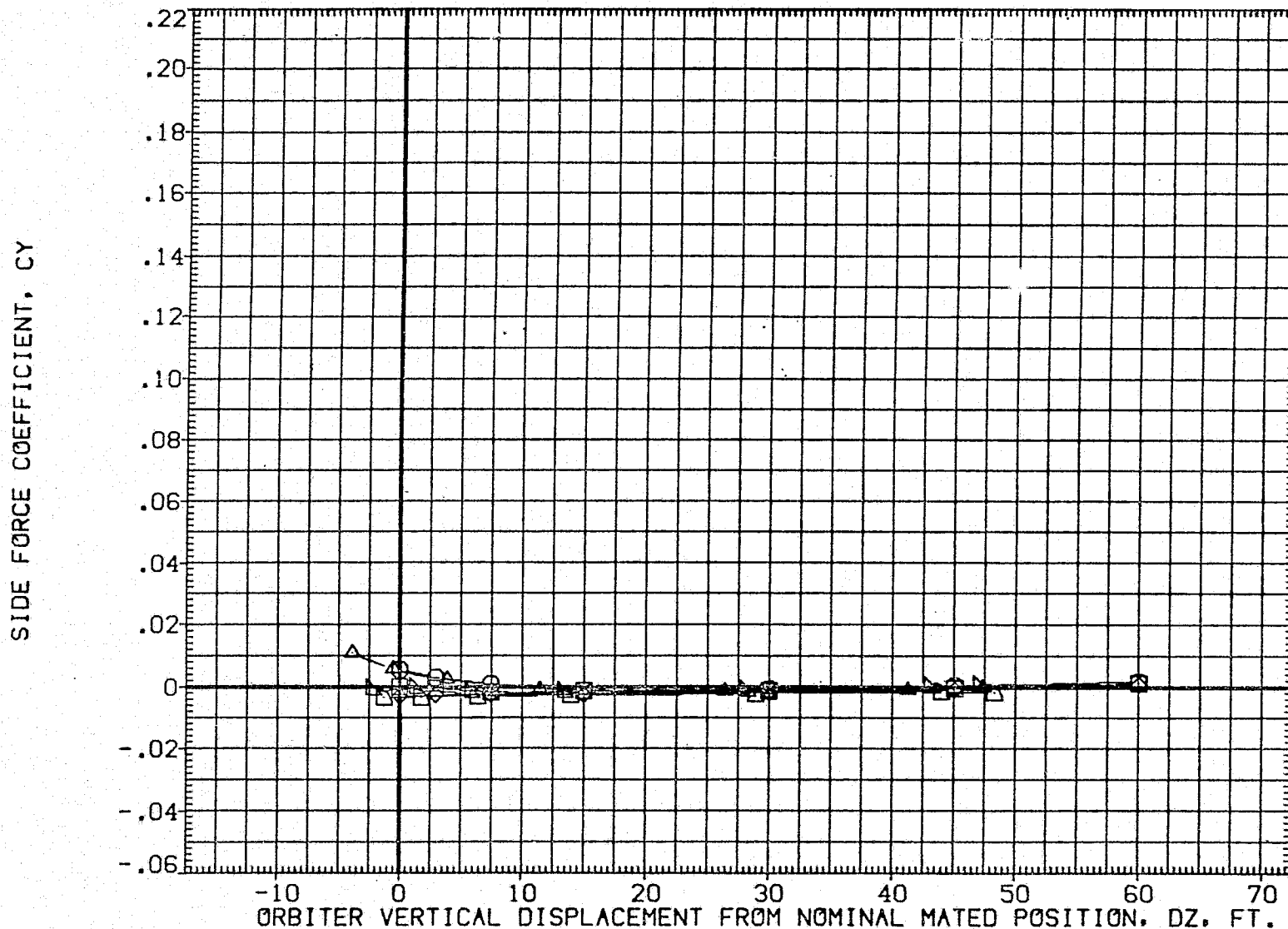


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (B)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION		
(JGN061)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF	2690.0000	SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF	474.8100	IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF	936.6800	IN.
(HGN061)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XMRP	1109.0000	IN.X0
(HGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YMRP	.0000	IN.Y0
(HGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP	375.0000	IN.Z0
						SCALE	.0300	

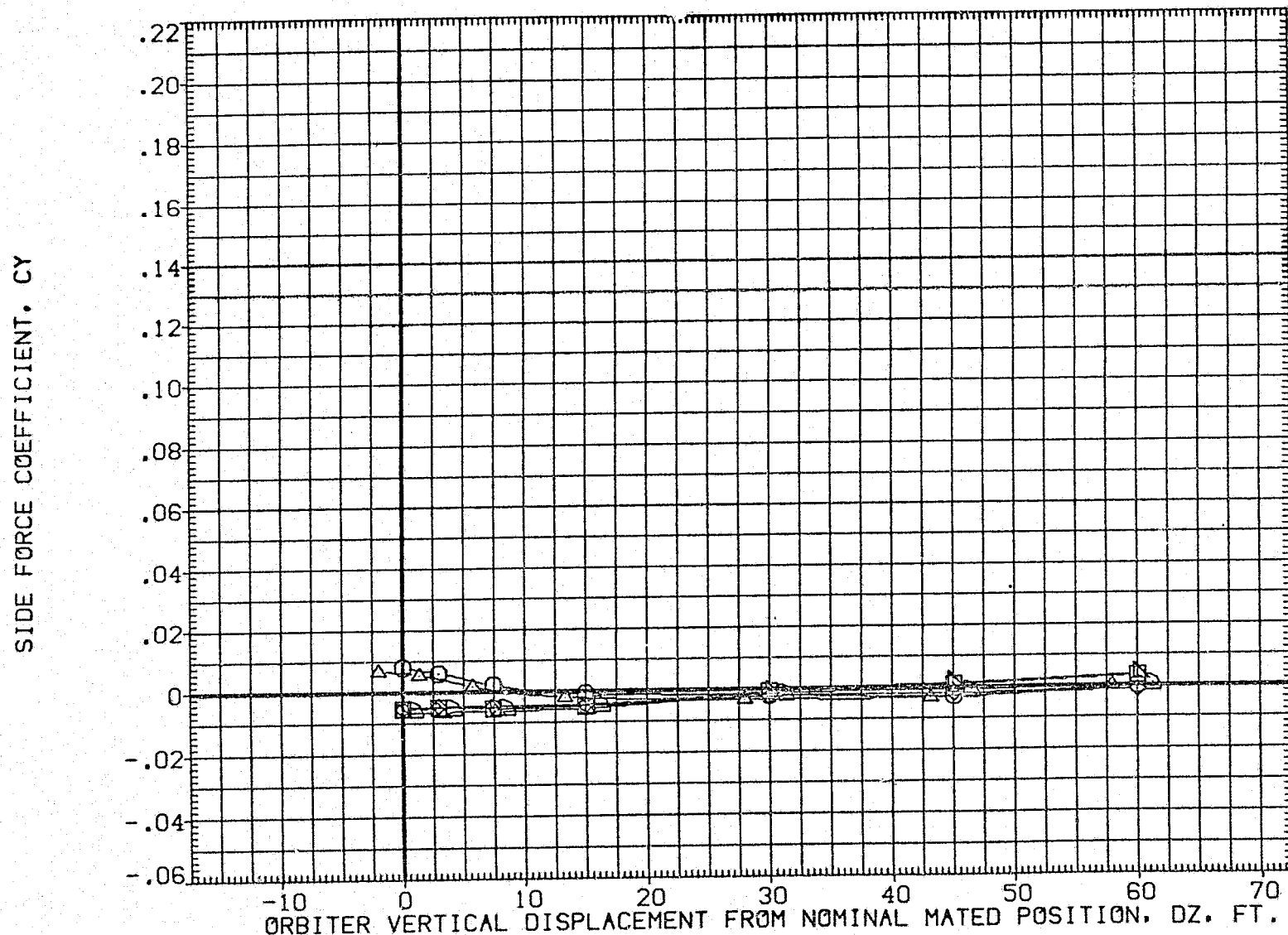


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (C)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION
(JGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.8800 IN.
(HGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.X0
(HGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	YMRP .0000 IN.Y0
(HGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.Z0
						SCALE .0300

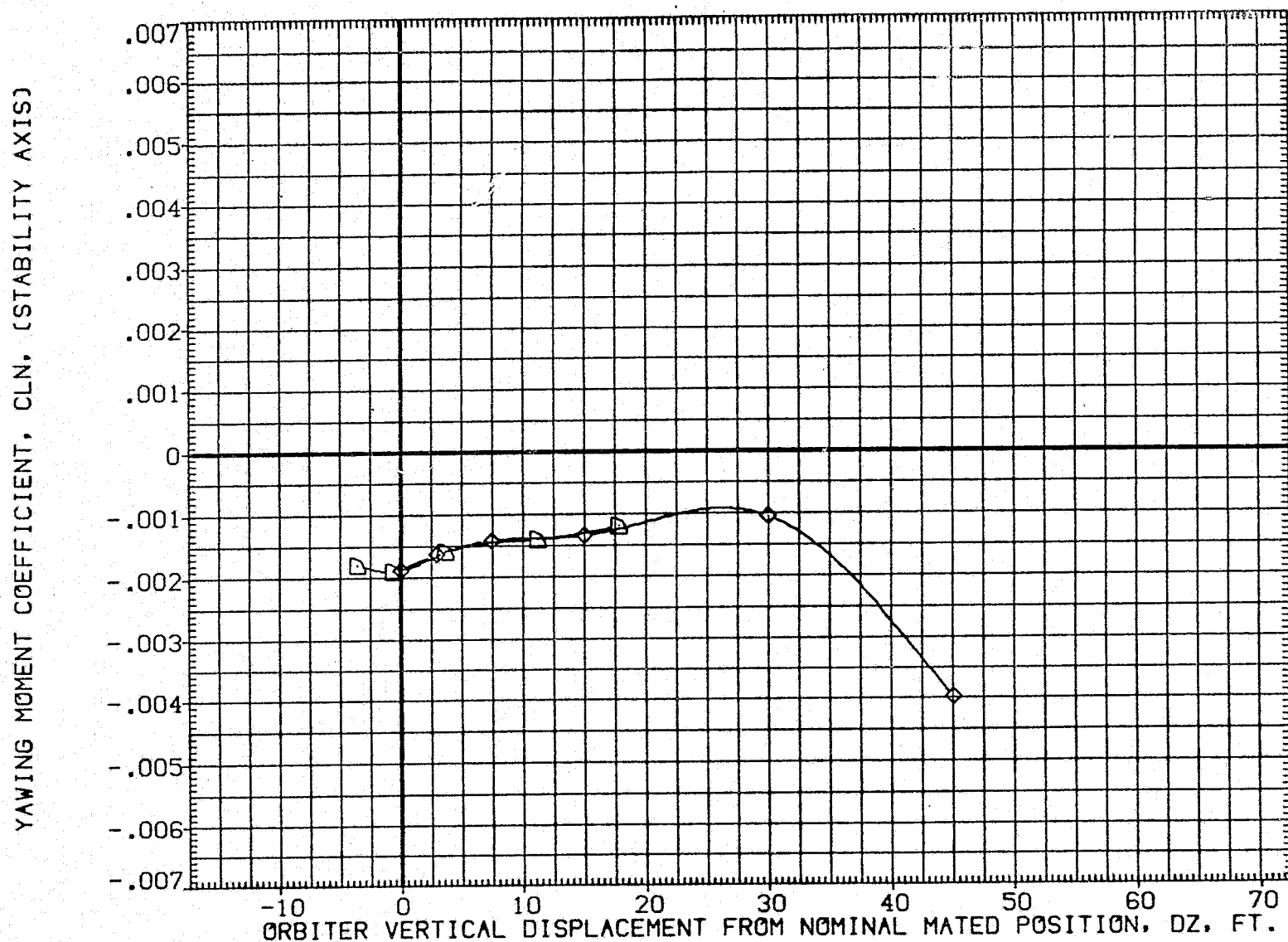


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (A) ALPHA0= 6.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION
(JGN061)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(HGN061)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.X0
(HGN059)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.Y0
(HGN053)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.Z0
							SCALE .0300

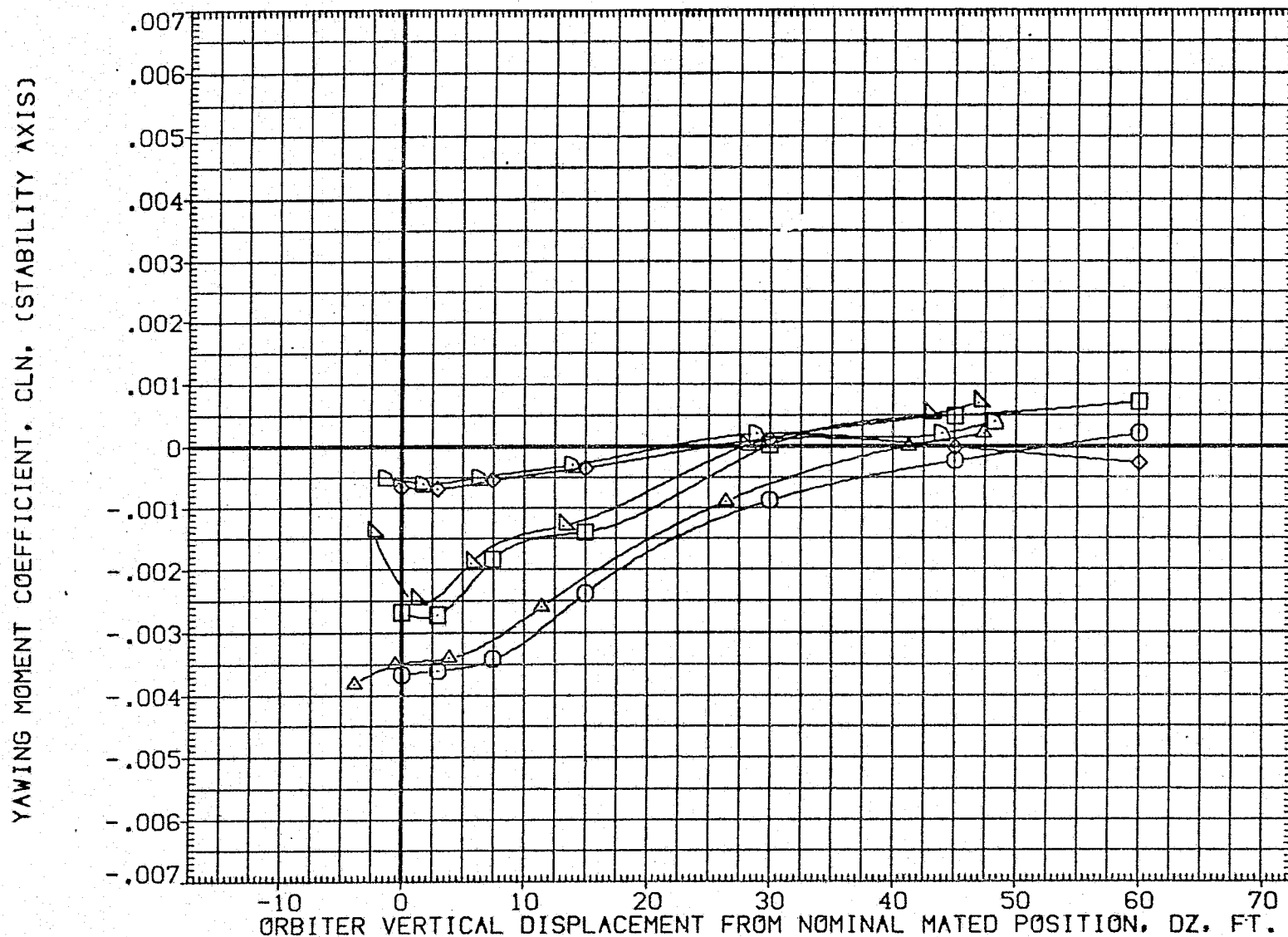


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA

(B)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHAC	OY	DX	BETA0	REFERENCE INFORMATION
(JGNO61)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGNO59)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGNO53)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(HGNO61)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XM RP 1109.0000 IN.X0
(HGNO59)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YM RP .0000 IN.Y0
(HGNO53)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZM RP 375.0000 IN.Z0
						SCALE .0300

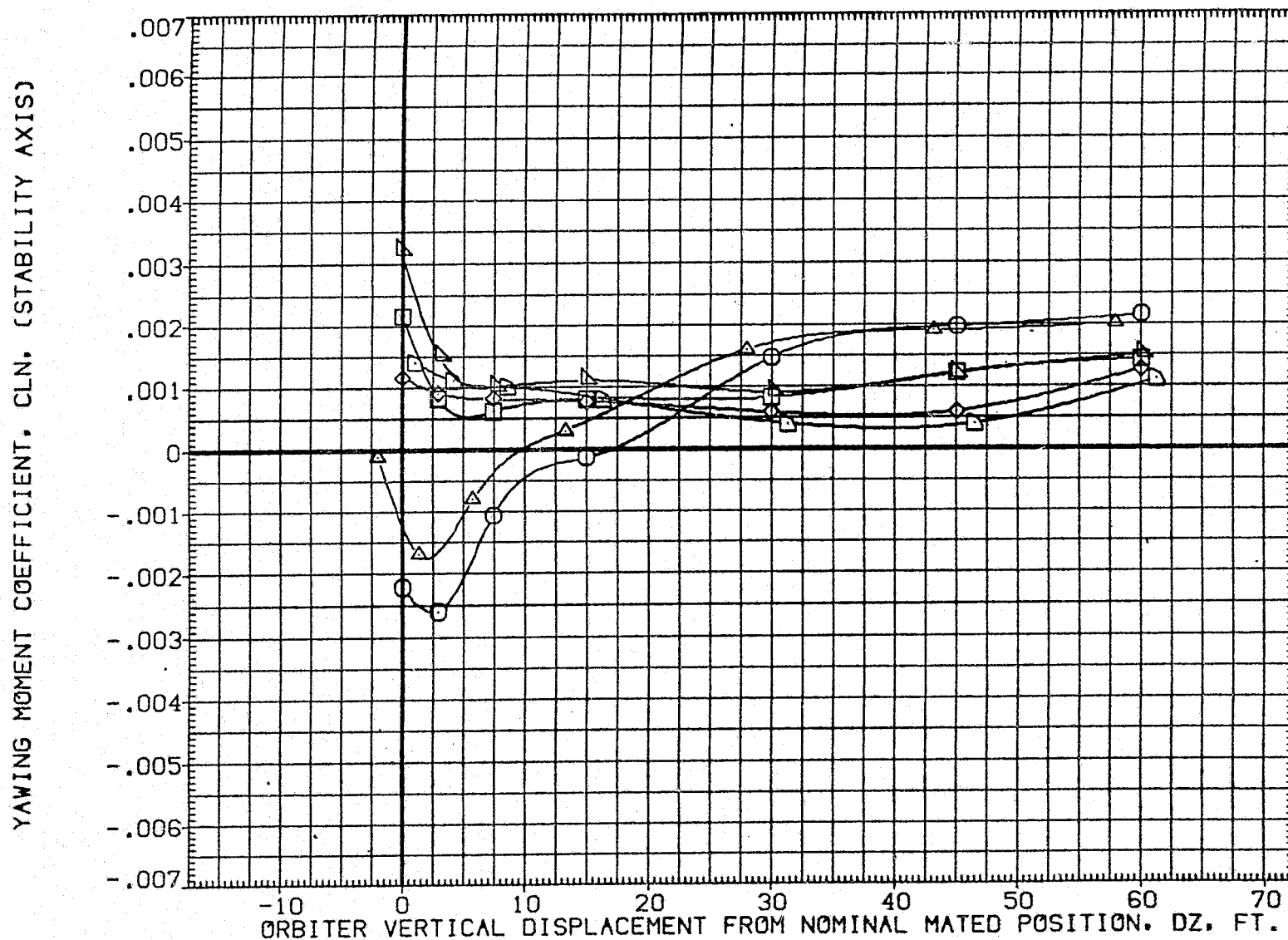


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA

(C)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION		
(JGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	SREF	2690.0000	SQ.FT.
(JGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	LREF	474.8100	IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF	936.6800	IN.
(HGN061)	DATA NOT AVAILABLE	8.000	10.000	10.000	.000	XMRP	1109.0000	IN.X0
(HGN059)	DATA NOT AVAILABLE	4.000	10.000	10.000	.000	YMRP	.0000	IN.Y0
(HGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP	375.0000	IN.Z0
						SCALE	.0300	

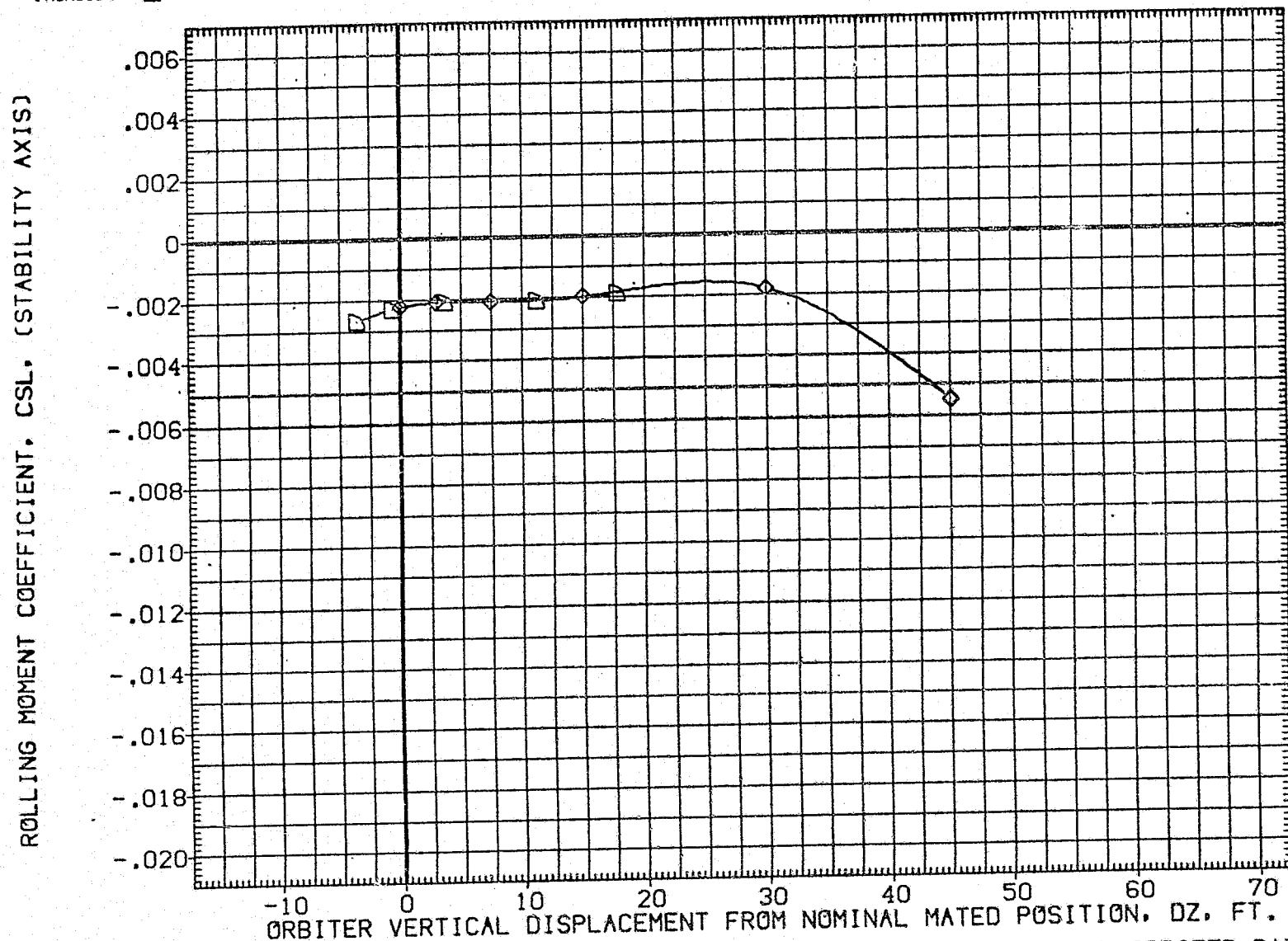


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (A) ALPHA0= 6.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION:	ALPHA0	OY	OX	BETA0	REFERENCE INFORMATION
(JGN061)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(HGN061)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.X0
(HGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.Y0
(HGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.Z0
						SCALE .0300

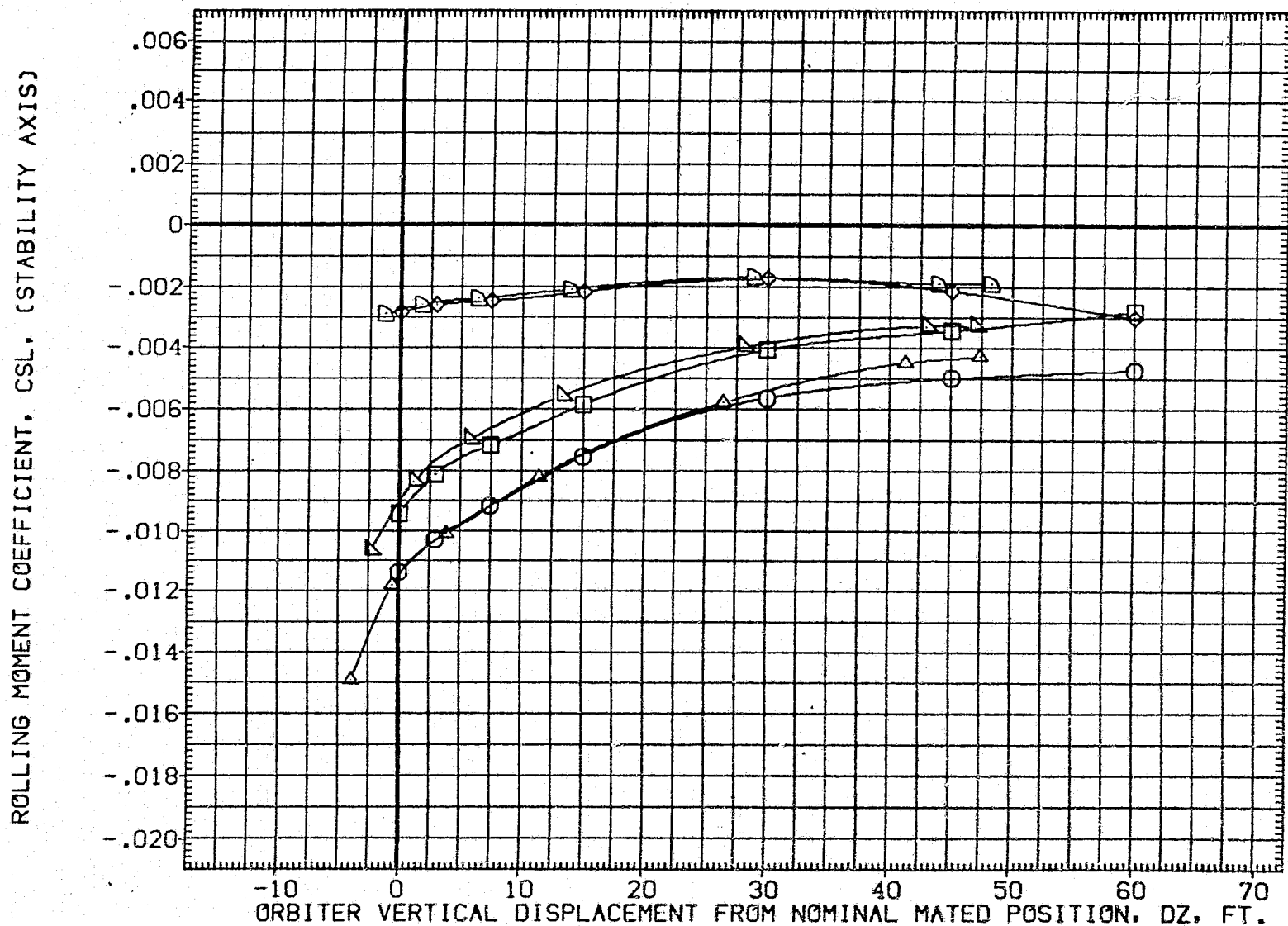


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
(B)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA0	DY	DX	BETA0	REFERENCE INFORMATION
(JGN061)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	LREF 474.8100 IN.
(JGN053)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	BREF 936.6800 IN.
(HGN061)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	8.000	10.000	10.000	.000	XMRP 1109.0000 IN.XC
(HGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	10.000	10.000	.000	YMRP .0000 IN.YC
(HGN053)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	4.000	.000	10.000	.000	ZMRP 375.0000 IN.ZC
						SCALE .0300

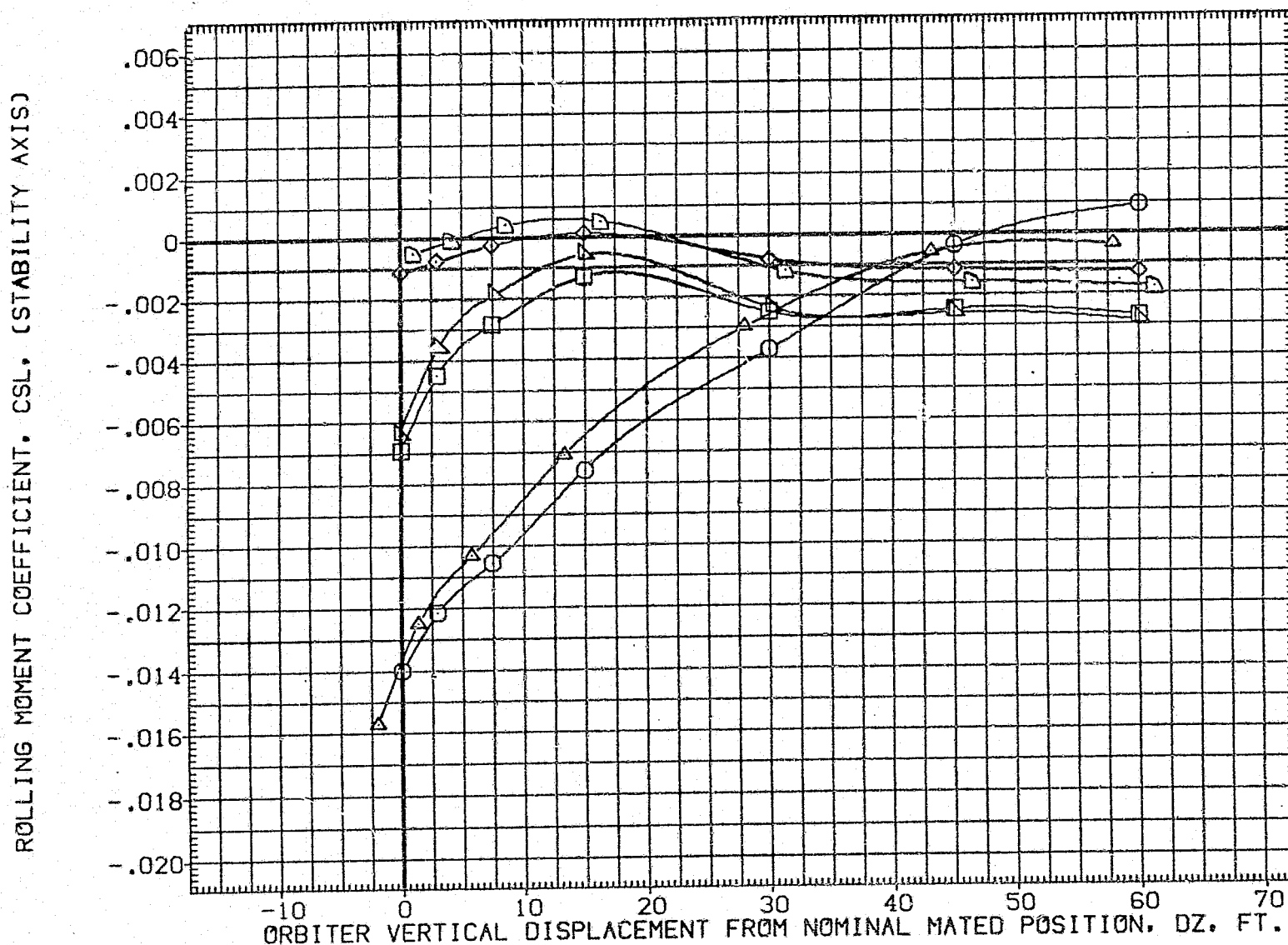


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
(C)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(JGN112)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF 2690.0000 59.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF 474.8100 IN.
(JGN089)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF 936.6800 IN.
(GGN112)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XHRP 1109.0000 IN.X0
(GGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YHRP .0000 IN.Y0
(GGN089)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZHRP 375.0000 IN.Z0
						SCALE .0300

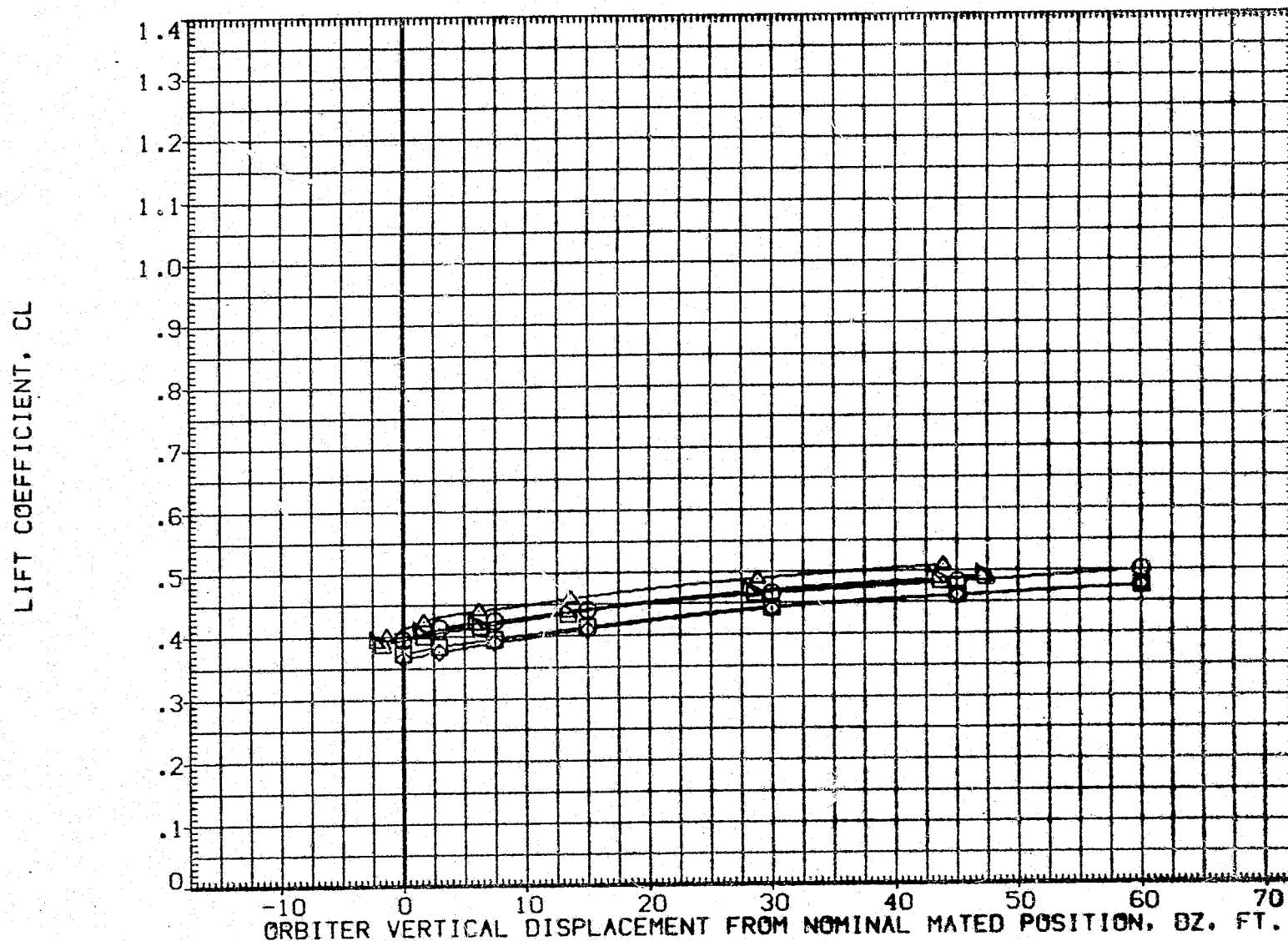


FIG 23. COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (A)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION		
(JGN112)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF	2699.0000	59.47.
(JGN059)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF	474.8100	IN.
(JGN089)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF	936.6800	IN.
(GGN112)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XMRP	1109.0000	IN.X0
(GGN059)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YMRP	.0000	IN.Y0
(GGN089)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZMRP	375.0000	IN.Z0
							SCALE	.0300	

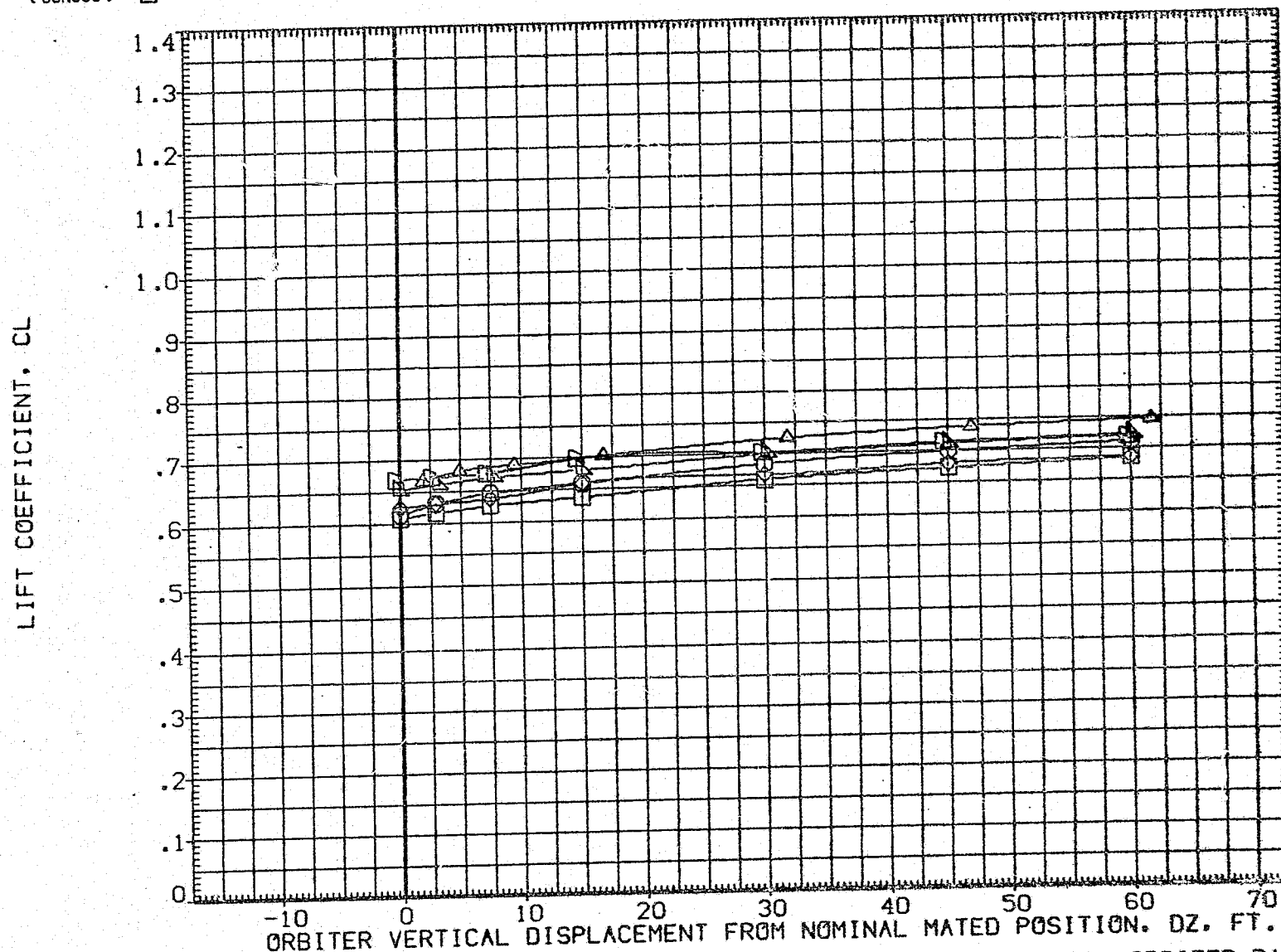


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION		
(JGN112)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF	2690.0000	50.FT.
(JGN059)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF	474.8100	IN.
(JGN089)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF	936.6800	IN.
(GGN112)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XMRP	1109.0000	IN.X0
(GGN059)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YMRP	.0000	IN.Y0
(GGN089)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZMRP	375.0000	IN.Z0
							SCALE	.0300	

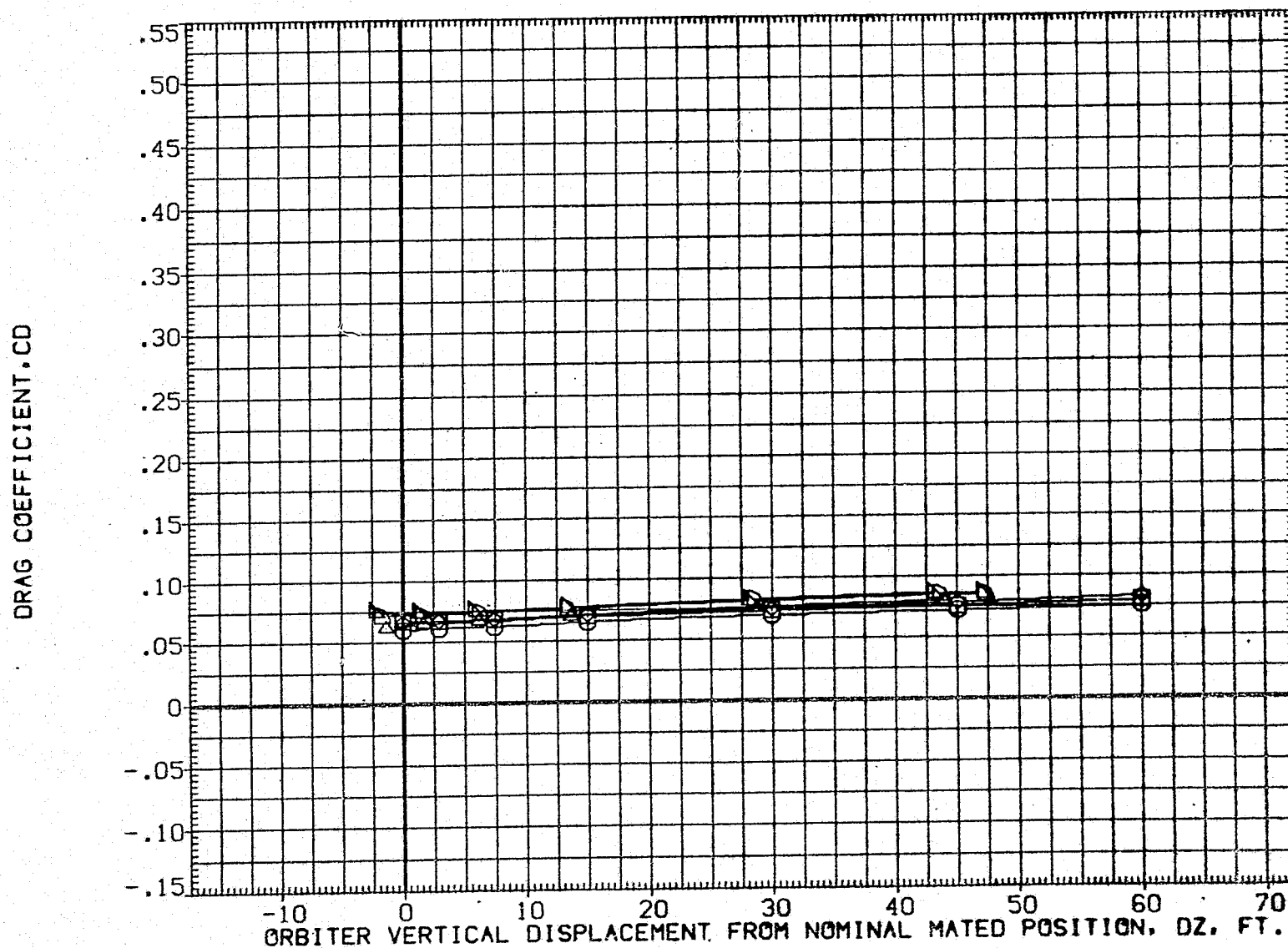


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (A)ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(JGN112)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF 2690.0000 SQ. FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF 474.9100 IN.
(JGN089)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF 936.6600 IN.
(GGN112)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XMRP 1109.0000 IN.X0
(GGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.Y0
(GGN089)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZMRP 375.0000 IN.Z0
						SCALE .0300

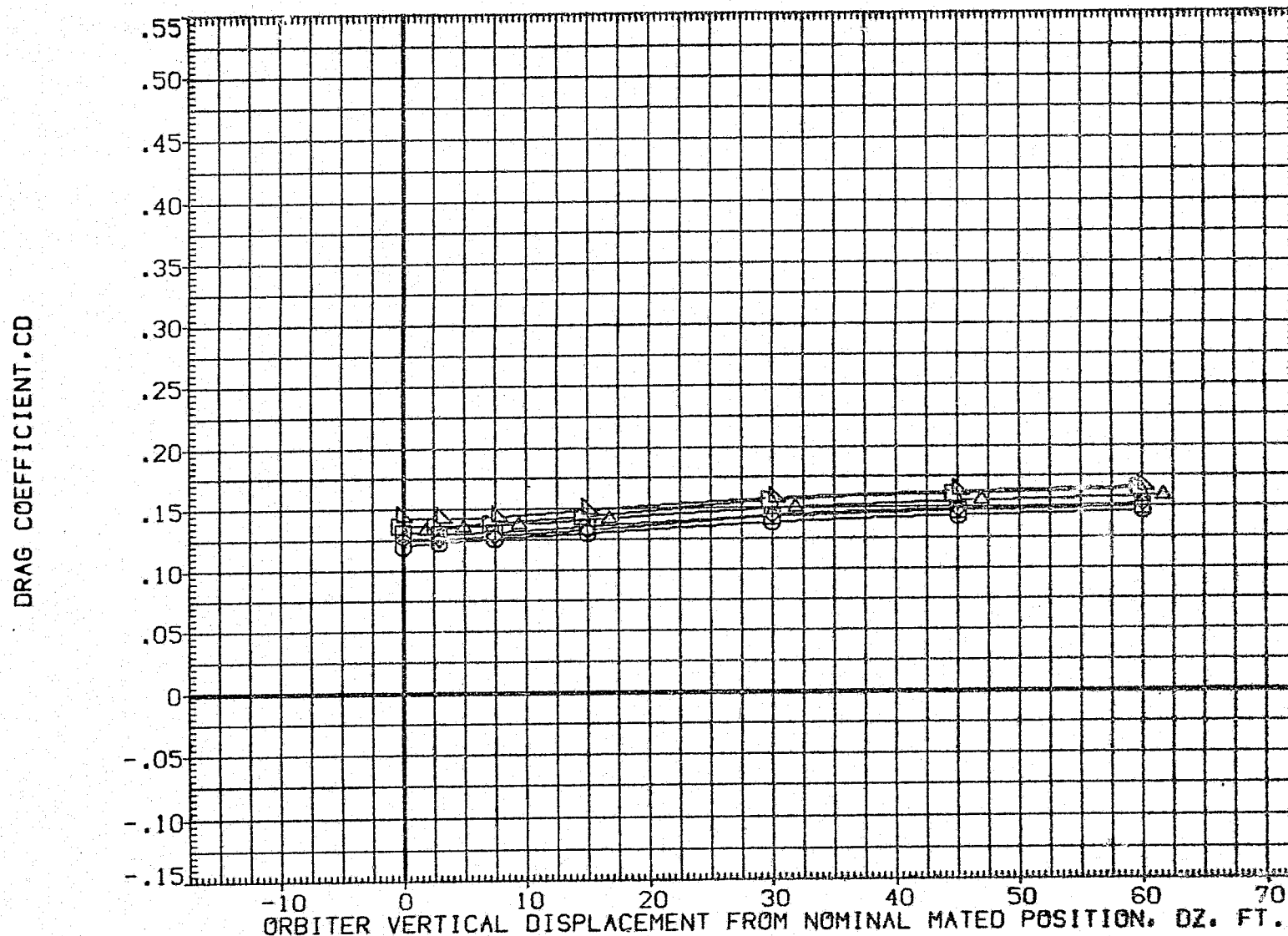
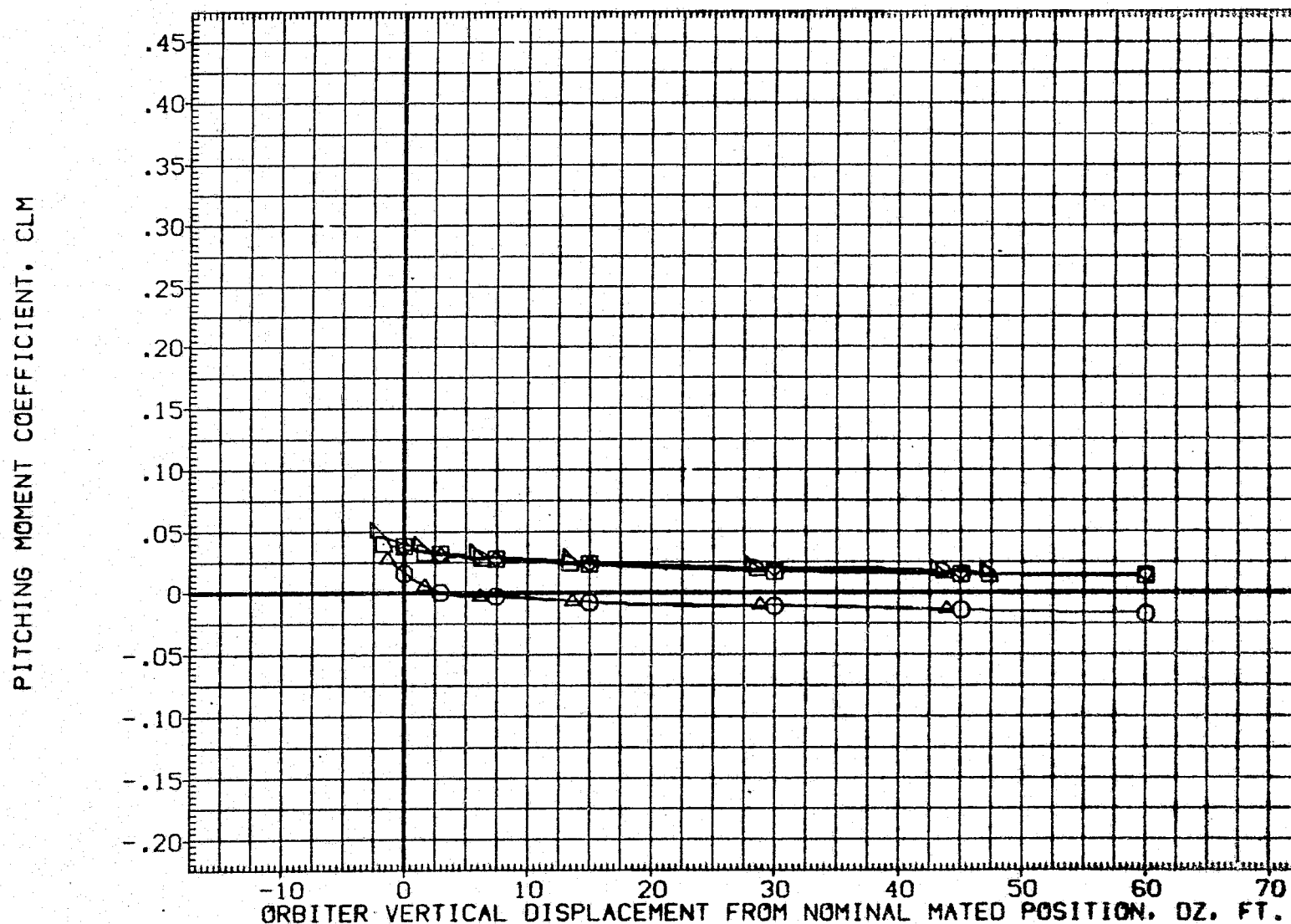


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (B) ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(JGN112)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF 474.8100 IN.
(JGN089)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF 935.6800 IN.
(GGN112)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XMRP 1103.0000 IN.X0
(GGN059)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.Y0
(GGN089)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZMRP 375.0000 IN.Z0
							SCALE .0300



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION		
(JGN112)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF	2690.0000	SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF	474.8100	IN.
(JGN089)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF	936.6800	IN.
(GGN112)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XMRP	1109.0000	IN.X0
(GGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YMRP	.0000	IN.Y0
(GGN089)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZMRP	375.0000	IN.Z0
						SCALE	.0300	

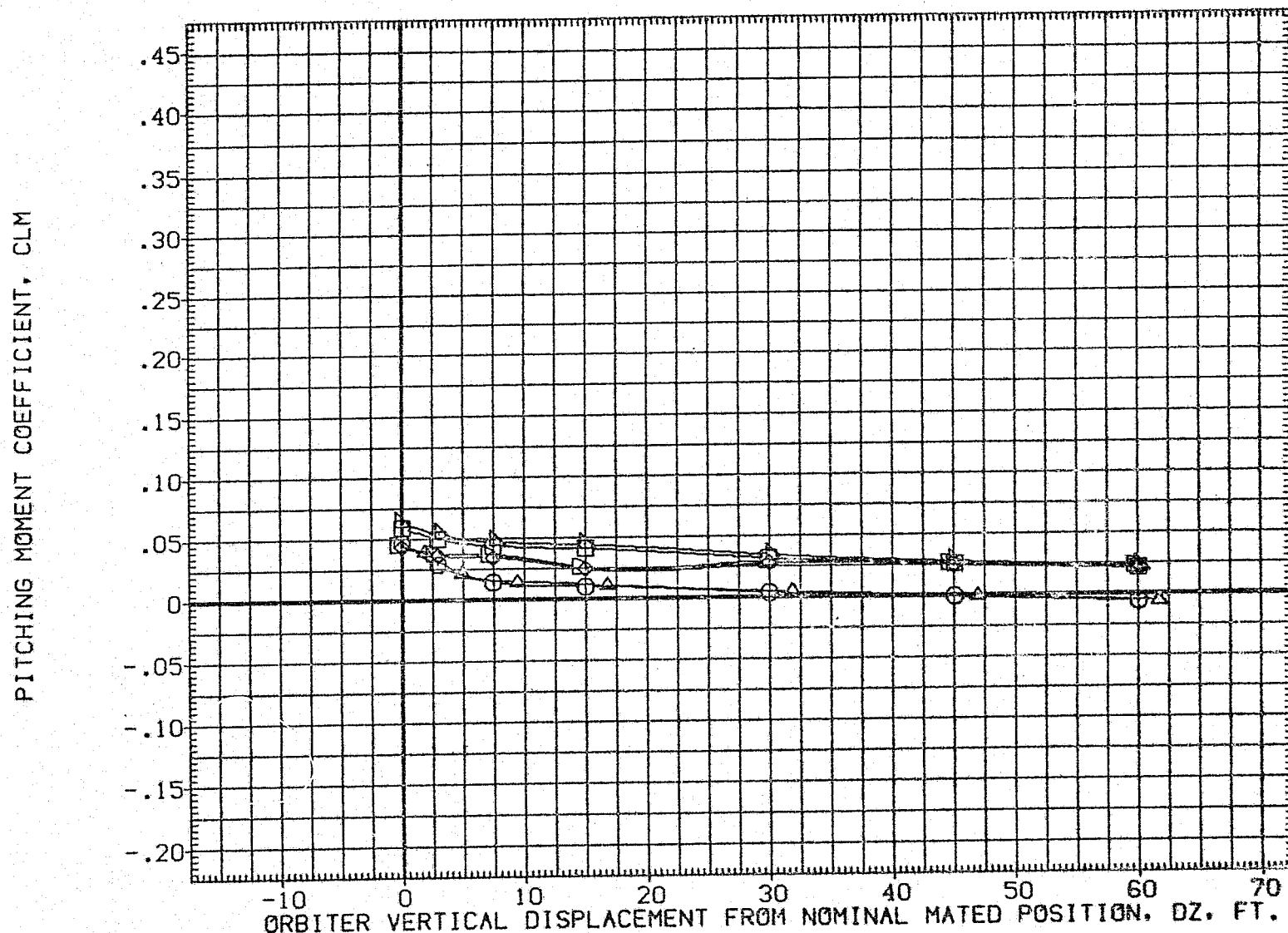


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (B)ALPHA0= 14.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ORBITER DATA	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(JGN112)	CA20 747/1 01 S1 INTERPOLATED	ORBITER DATA	.000	.000	4.000	10.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED	ORBITER DATA	.000	.000	4.000	10.000	LREF 474.8100 IN.
(JGN089)	CA20 747/1 01 S1 INTERPOLATED	ORBITER DATA	.000	7.500	4.000	10.000	BREF 936.6800 IN.
(HGN112)	CA20 747/1 01 S1 UNINTERPOLATED	ORBITER DATA	.000	.000	4.000	10.000	XHRP 1103.0000 IN.X0
(HGN059)	CA20 747/1 01 S1 UNINTERPOLATED	ORBITER DATA	.000	.000	4.000	10.000	YHRP .0000 IN.Y0
(HGN089)	CA20 747/1 01 S1 UNINTERPOLATED	ORBITER DATA	.000	7.500	4.000	10.000	ZHRP 375.0000 IN.Z0
							SCALE .0300

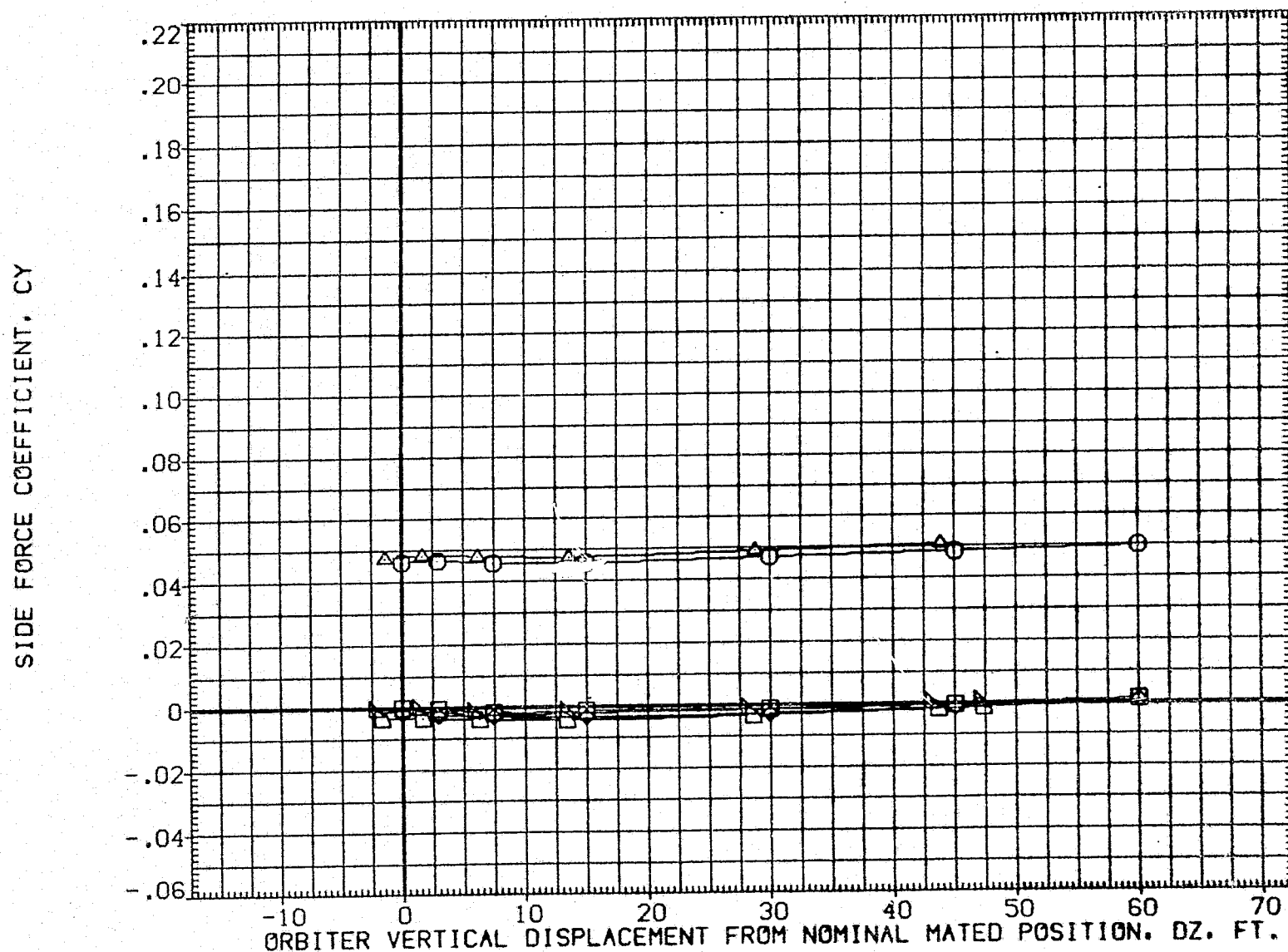


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (A) ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(JGN112)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF 474.8100 IN.
(JGN089)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF 936.6800 IN.
(HGN112)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XMRP 1109.0000 IN.X0
(HGN059)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.Y0
(HGN089)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZMRP 375.0000 IN.Z0
							SCALE .6300

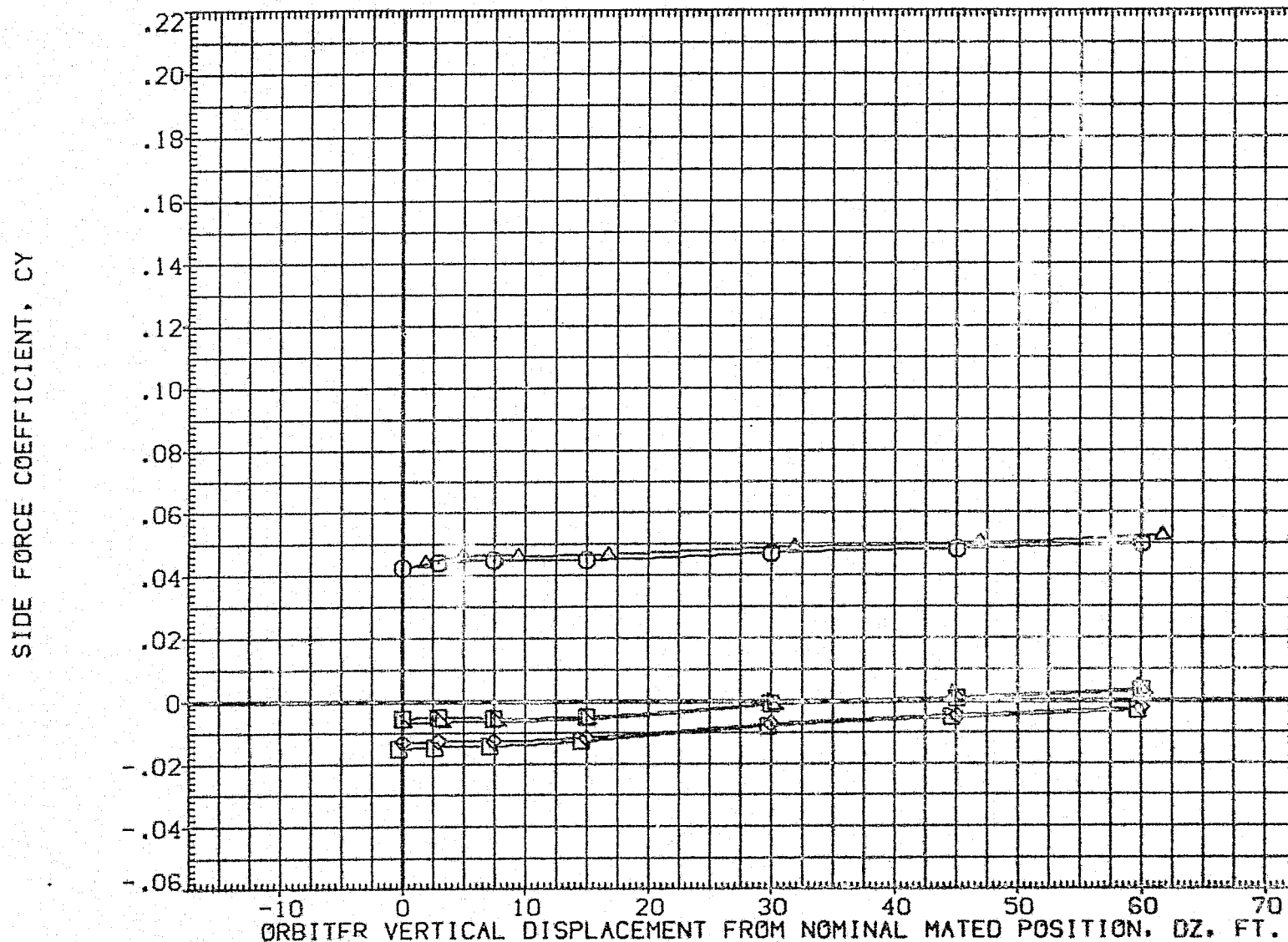


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (B)ALPHA0= 14.00

DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(JGN112)	□	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF 2690.0000 SQ.FT.
(JGN059)	□	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF 474.8100 IN.
(JGN089)	×	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF 936.6000 IN.
(HGN112)	△	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XMRP 1109.0000 IN.X0
(HGN059)	△	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.Y0
(HGN089)	△	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZMRP 375.0000 IN.Z0
								SCALE .0300

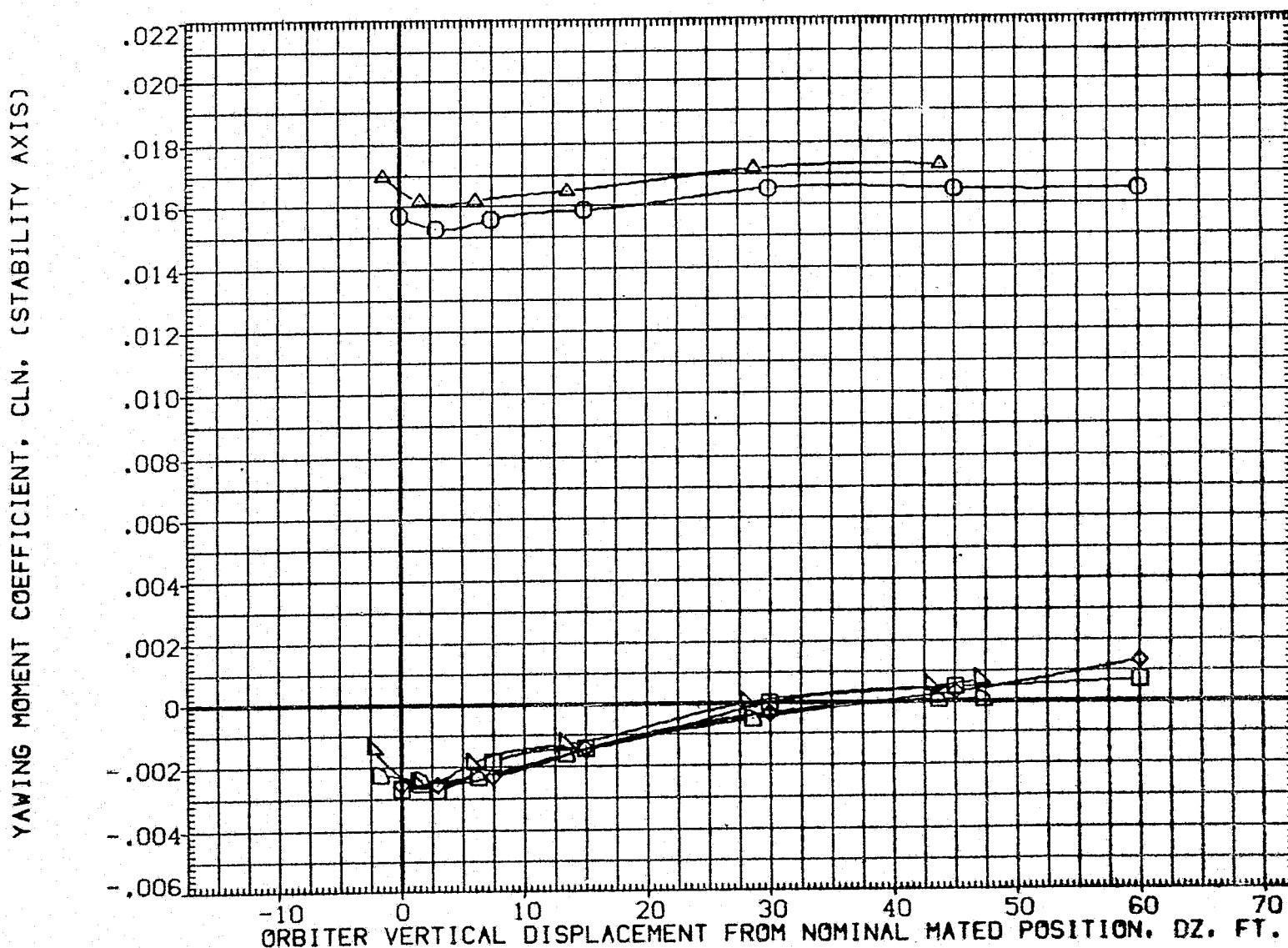


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
(A) ALPHA0= 10.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(JGN112)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF 2690.0000 SQ.FT.
(JGN059)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF 474.8100 IN.
(JGN089)	CA20 747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF 936.6800 IN.
(HGN112)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XMRP 1109.0000 IN.X3
(HGN059)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.Y3
(HGN089)	CA20 747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZMRP 375.0000 IN.Z3
						SCALE .0300

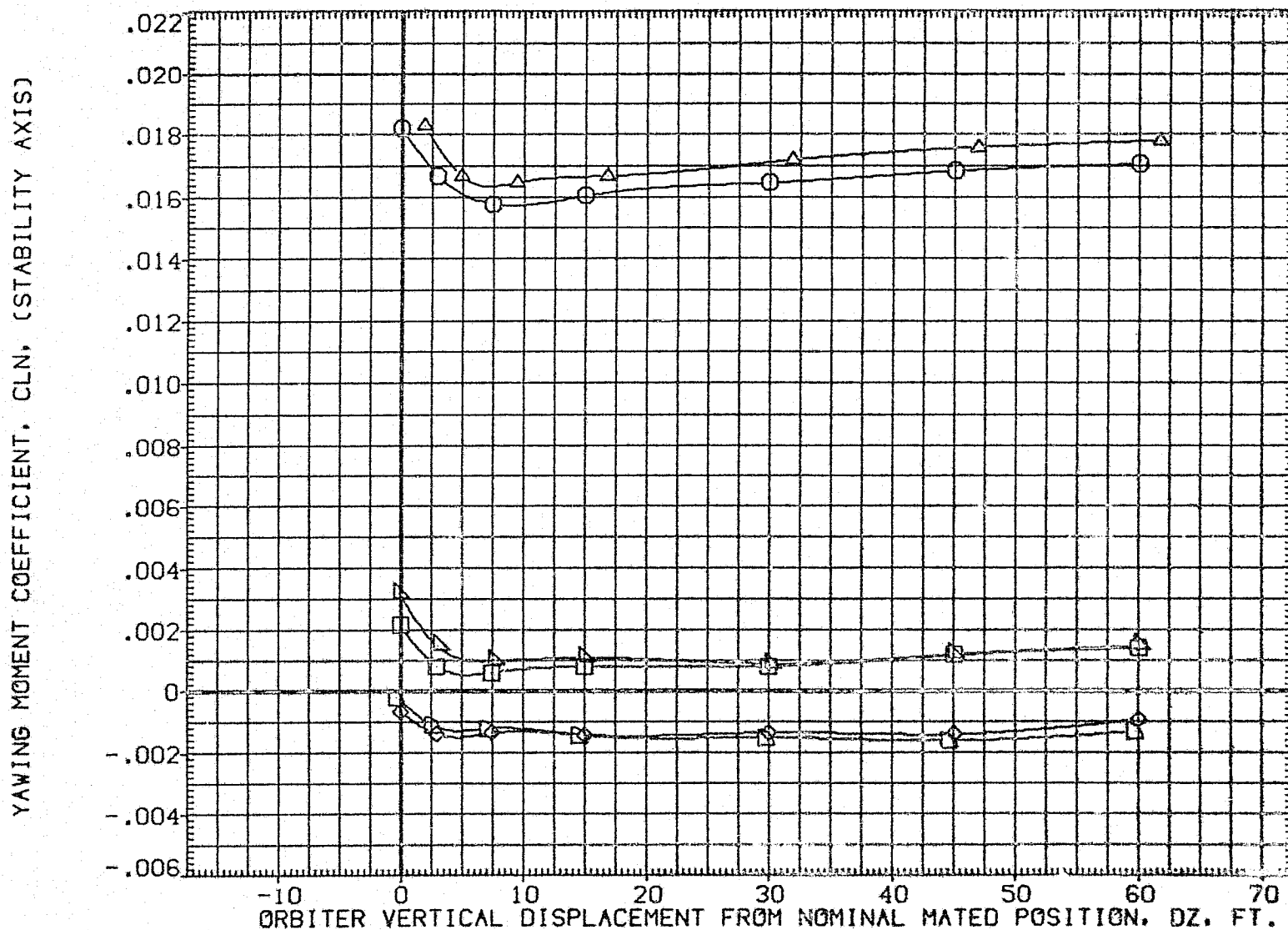


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (B)ALPHA0= 14.00

DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION
(JGN112)	□	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF 2690.0000 SQ.FT.
(JGN059)	◇	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF 474.9100 IN.
(JGN089)	△	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF 935.6900 IN.
(HGN112)	◇	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XMRP 1109.0000 IN.X0
(HGN059)	△	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YMRP .0000 IN.Y0
(HGN089)	□	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZMRP 375.0000 IN.Z0
								SCALE .0300

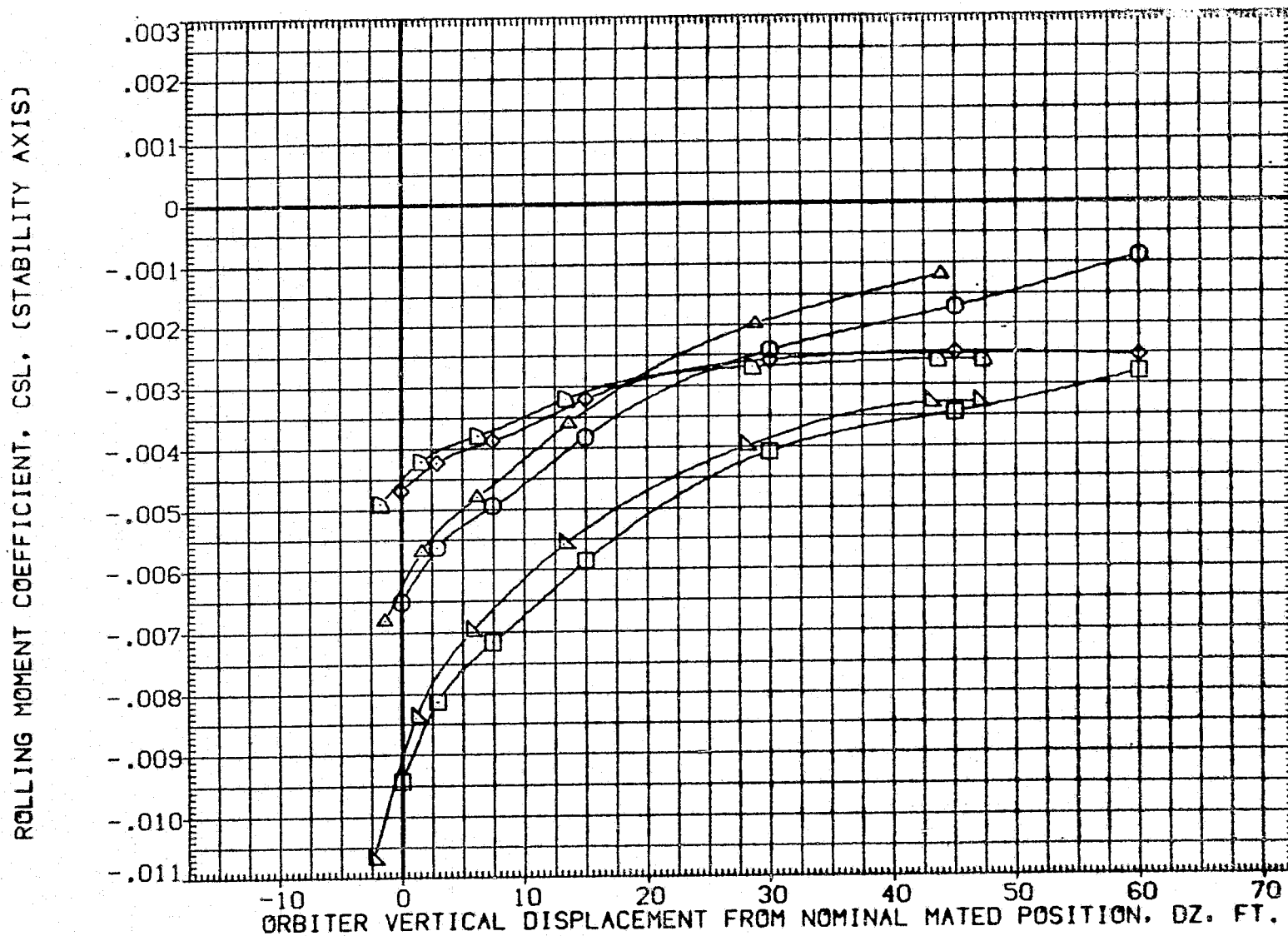


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (A) $\alpha_0 = 10.00$

DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	BETAC	PHI	ALPHAC	DY	REFERENCE INFORMATION		
(JGN112)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	SREF	2690.0000	50.FT.
(JGN059)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	LREF	474.8100	IN.
(JGN089)	CA20	747/1 01 S1 INTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	BREF	936.6800	IN.
(HGN112)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	XMRP	1109.0000	IN.X0
(HGN059)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	.000	4.000	10.000	YMRP	.0000	IN.Y0
(HGN089)	CA20	747/1 01 S1 UNINTERPOLATED ORBITER DATA	.000	7.500	4.000	10.000	ZMRP	375.0000	IN.Z0
							SCALE	.0300	

ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

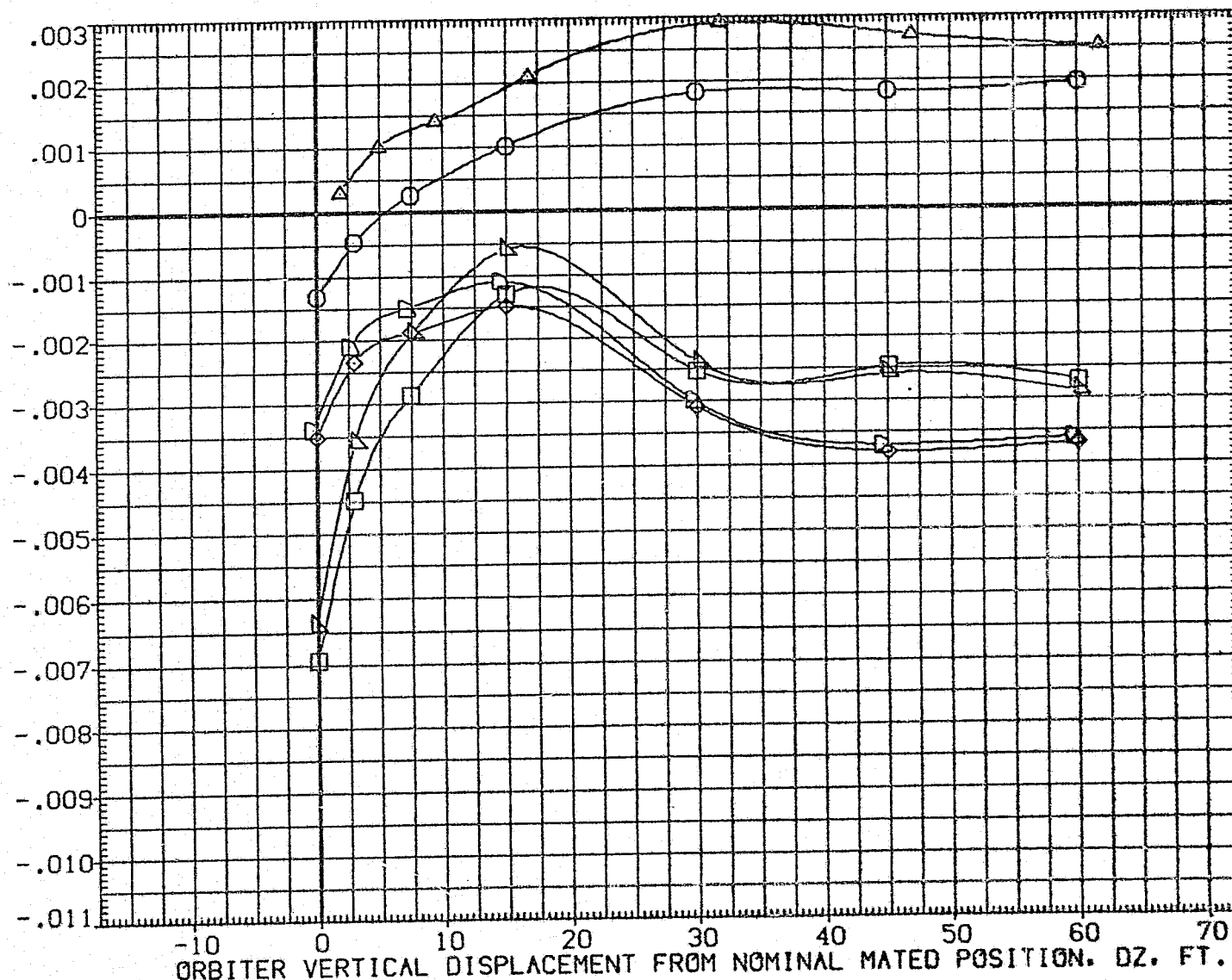


FIG 23 COMPARISON BETWEEN INTERPOLATED (NGN--- DATASETS) AND RAW ORBITER DATA
 (B)ALPHA0= 14.00

CA20 747/1 01 S1

CARRIER DATA (MGN104)

SYMBOL ○ □	ALPHA0	10.000	ELV-18	.000	ELV-08	3.000
		14.000	ELEVON	5.000	MACH	.600
			PHI	.000	BETA0	-5.000
			BETAC	-5.000	DY	.000
			DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

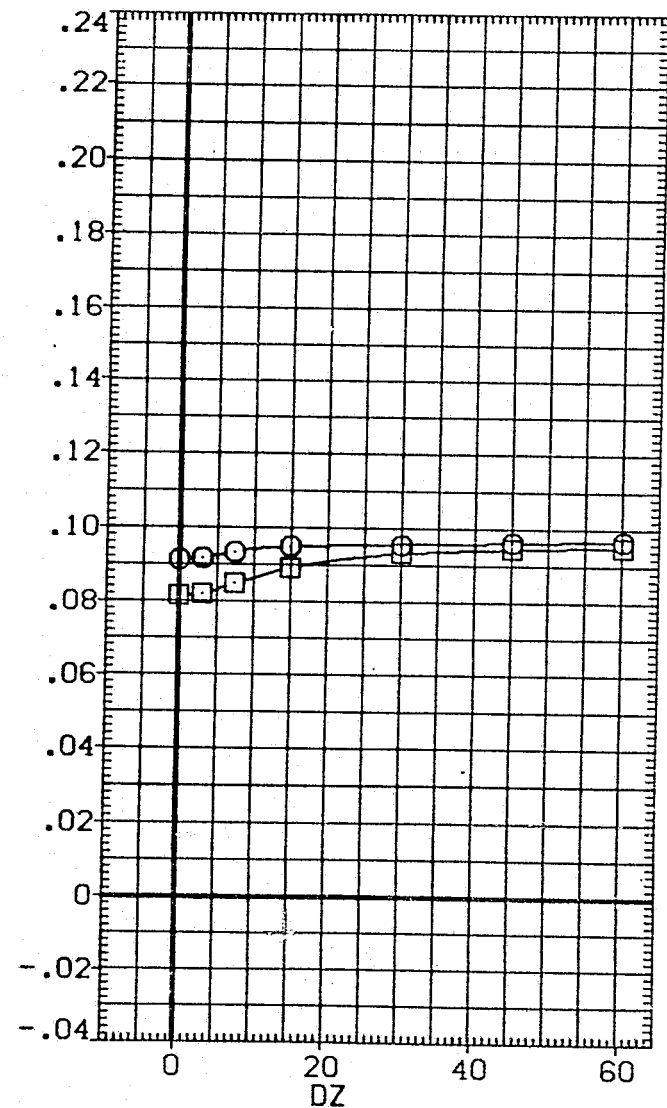
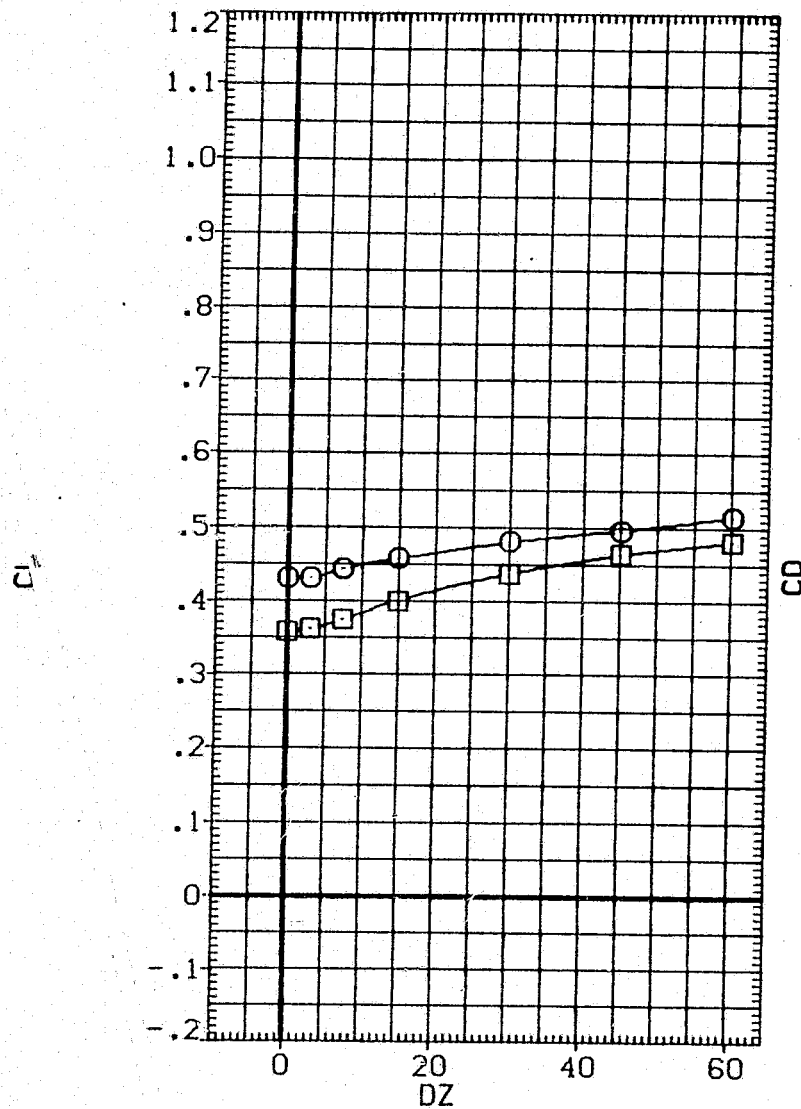


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	-5.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

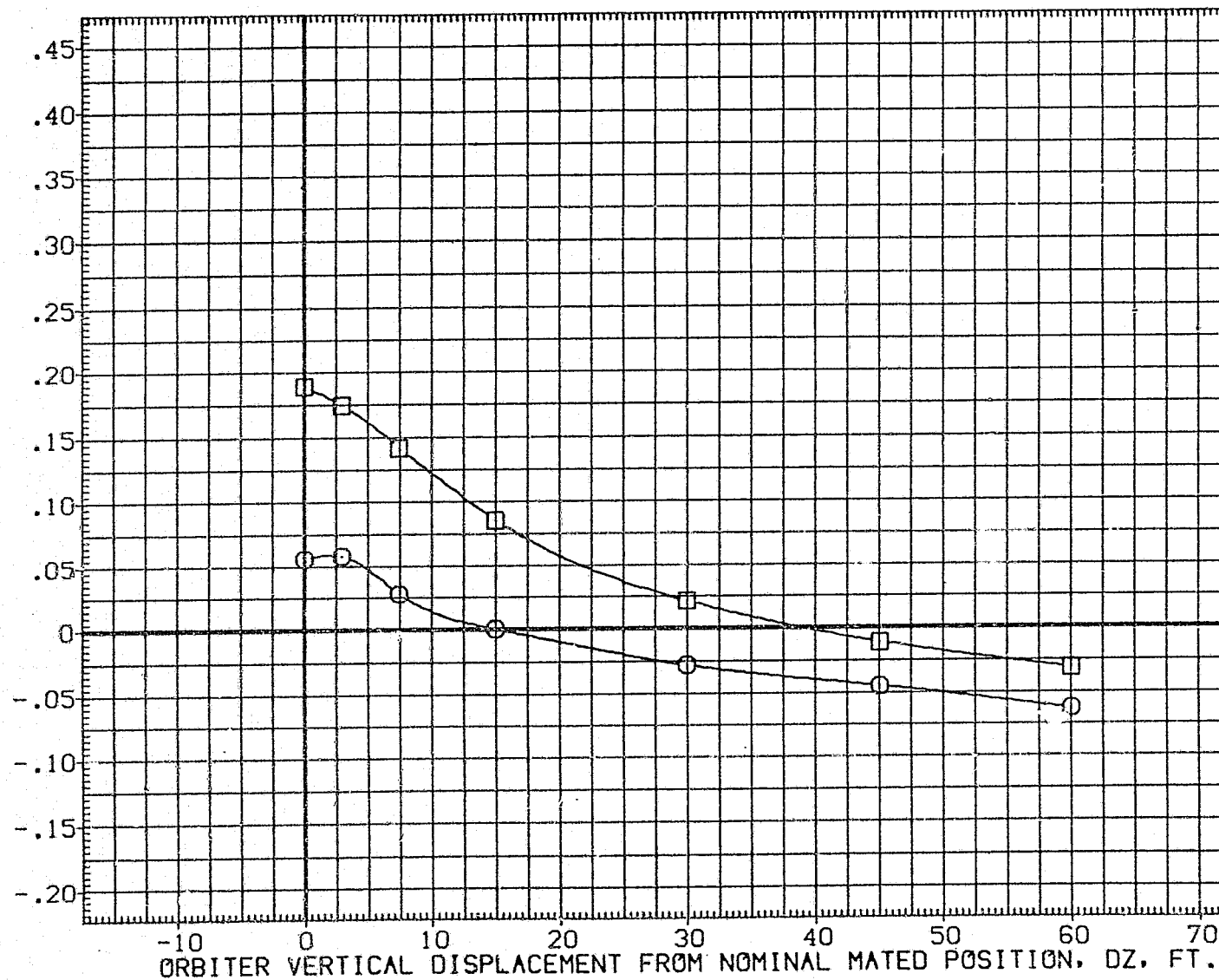


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-18	PARAMETRIC VALUES	ELV-08	
○	10.000	ELEV0N	.000	MACH	3.000
□	14.000	PHI	5.000	BETA0	.800
		BETAC	.000	DY	-5.000
		DX	-5.000	ALPHAC	.000
			10.000		4.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

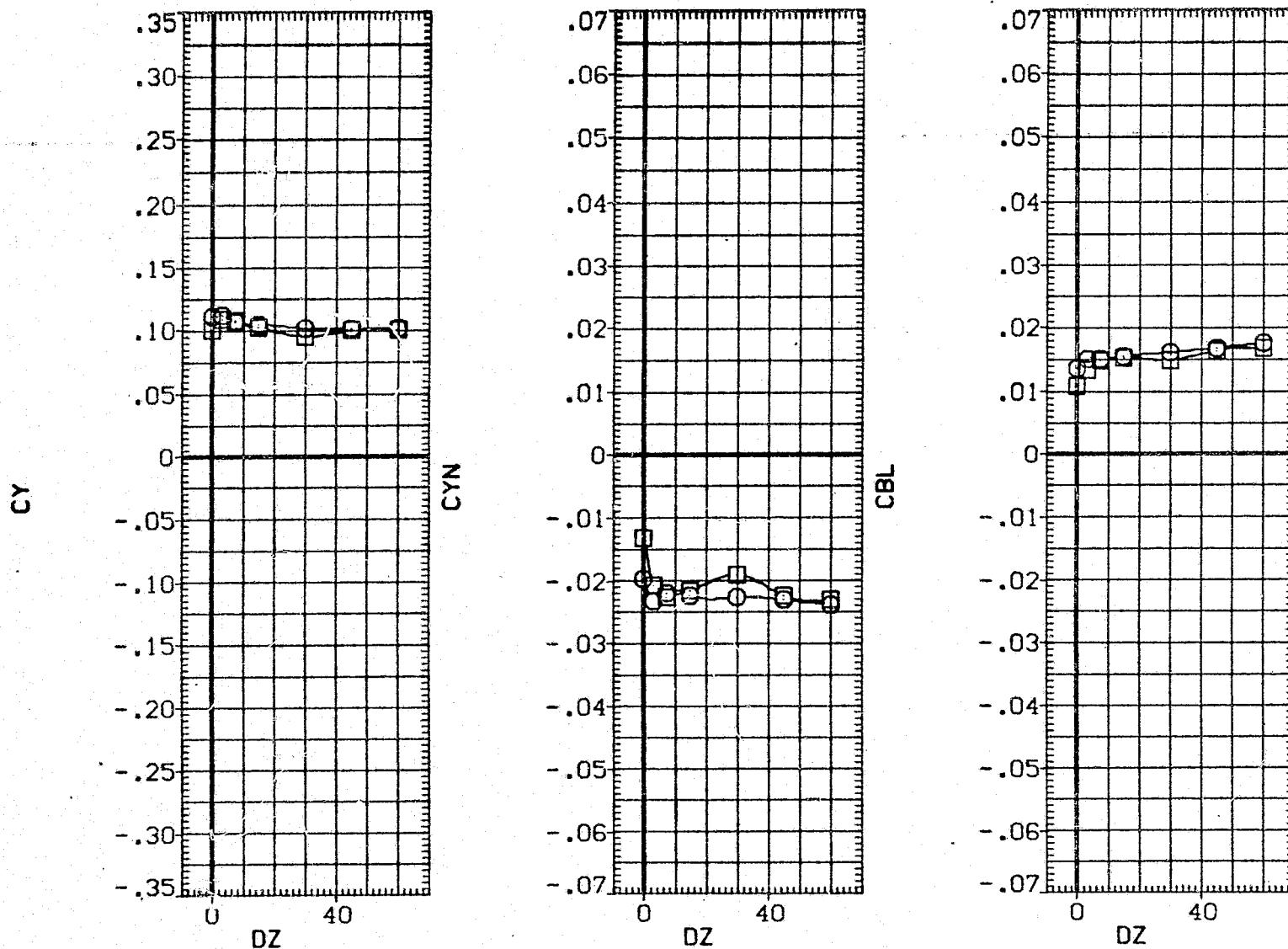


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB	
○	10.000	.000		3.000	
□	14.000	5.000		.600	
		PHI	.000	BETA0	-5.000
		BETAC	-5.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

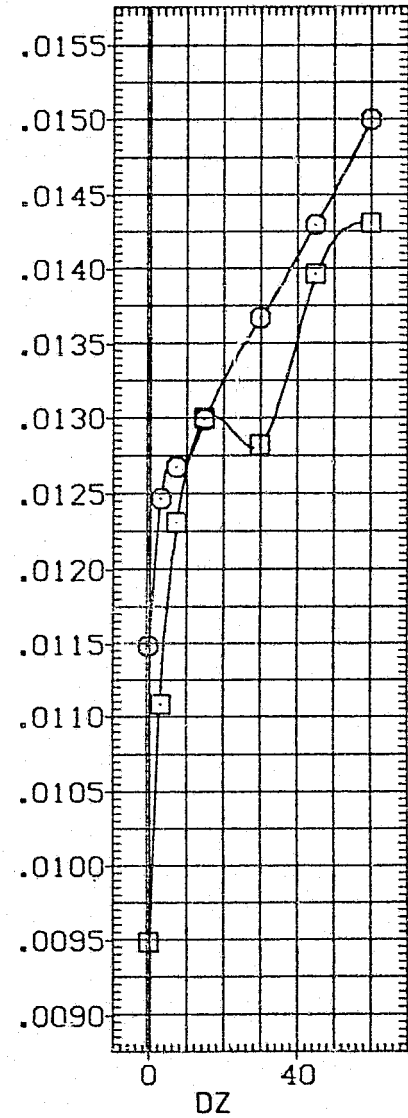
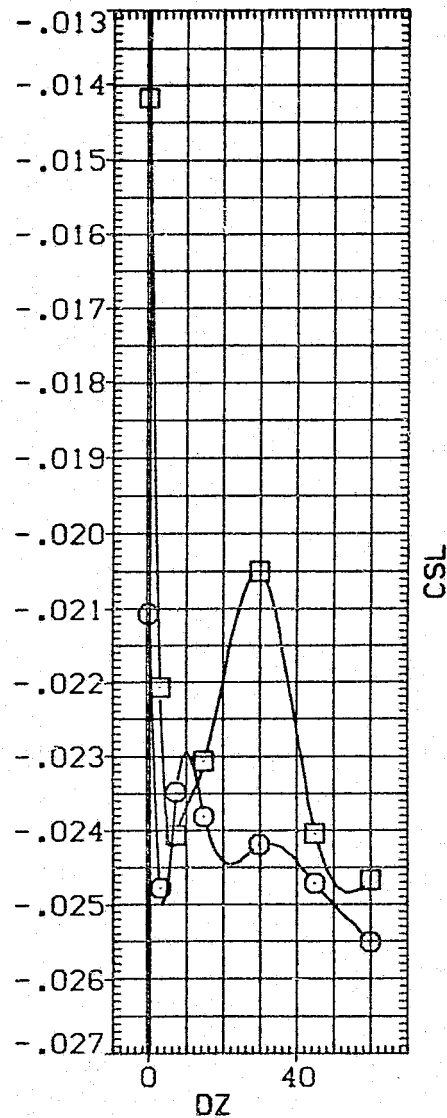
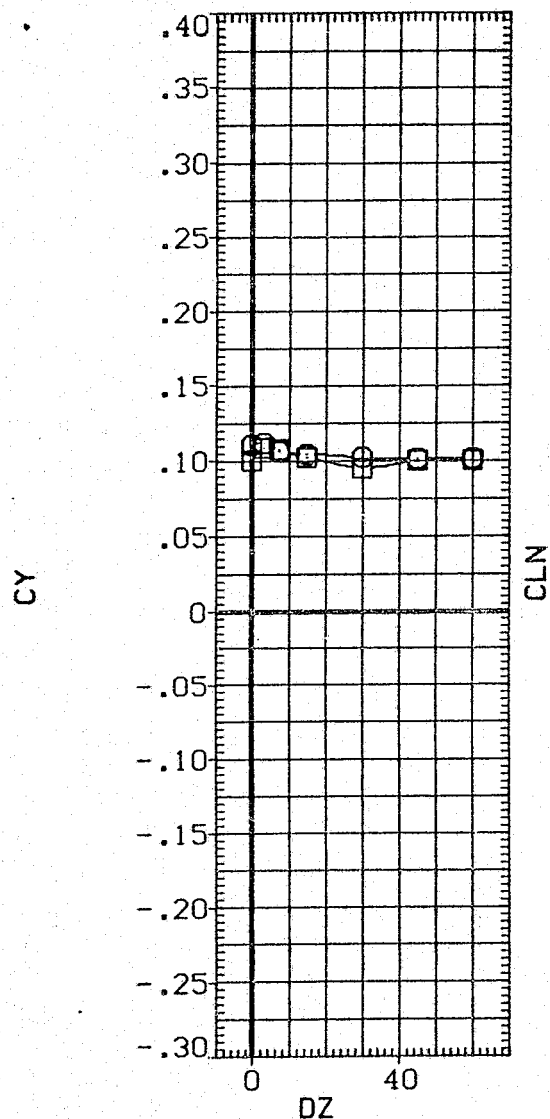


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	-5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

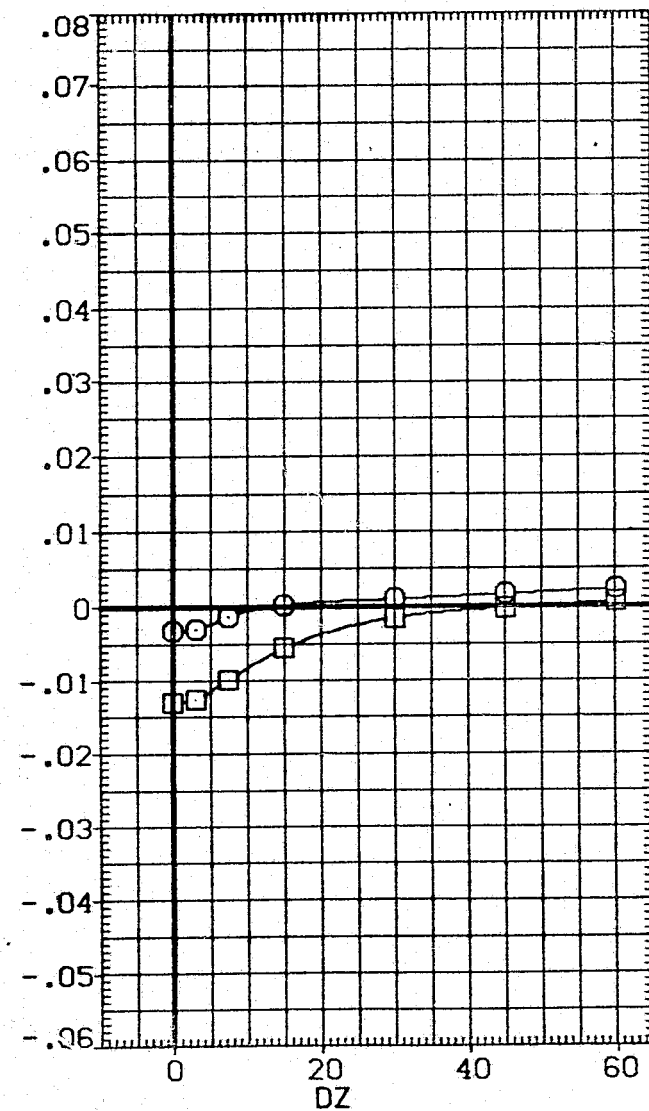
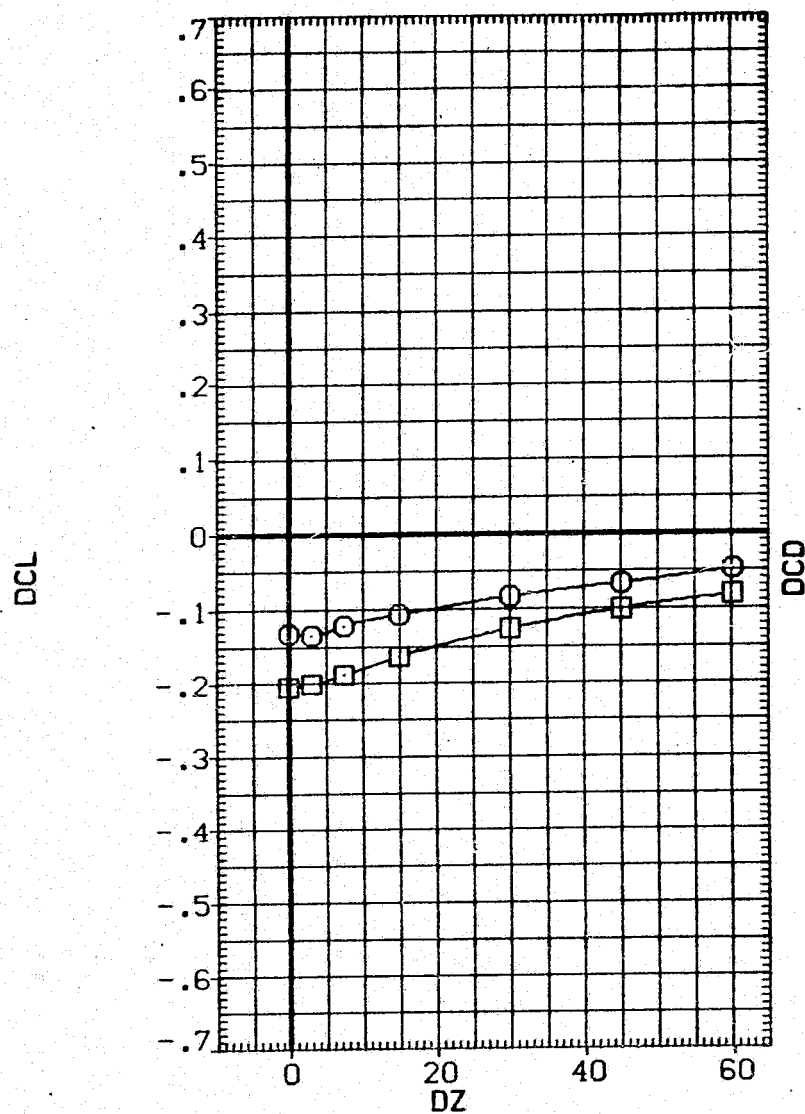


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	-5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

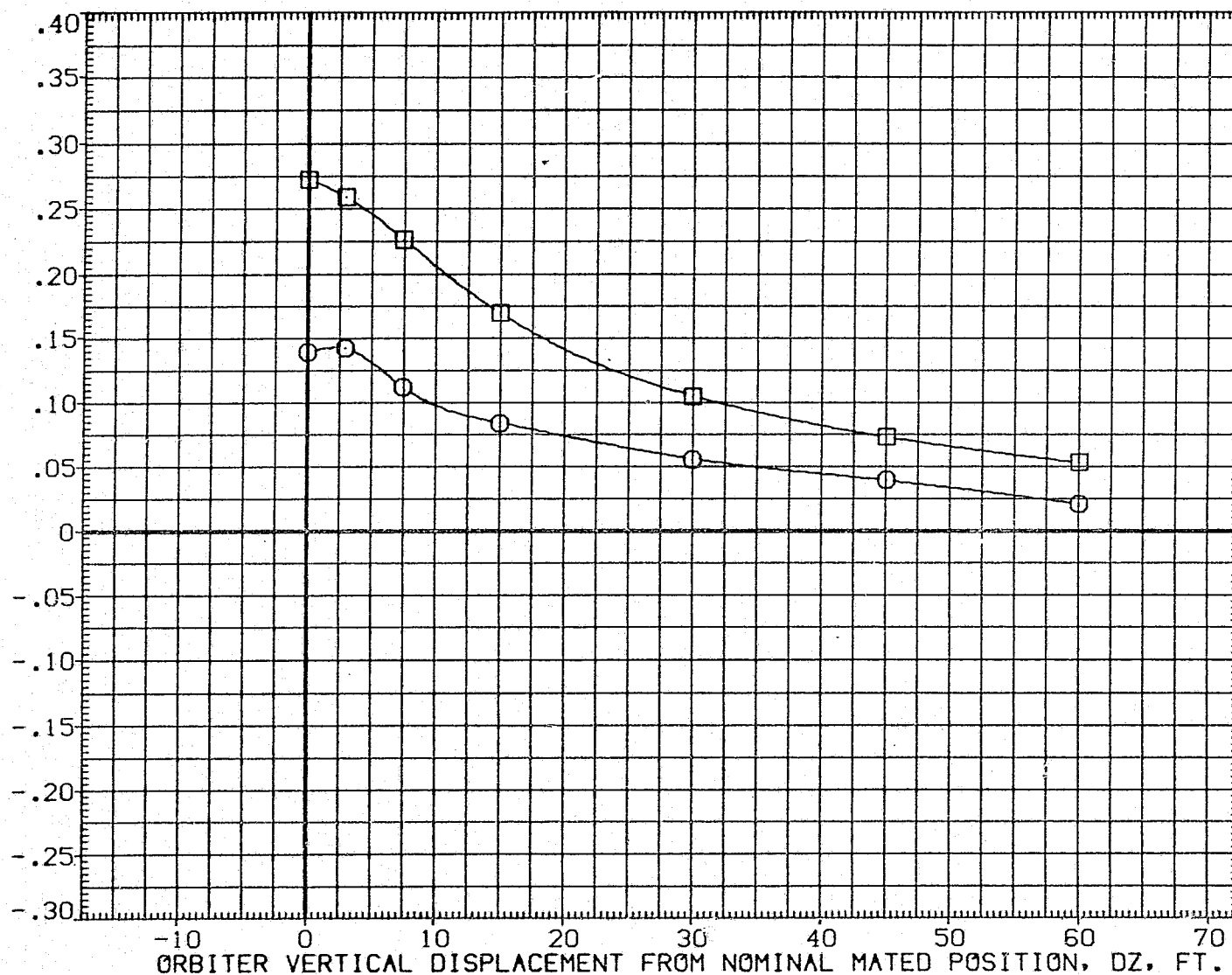


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	4.000	BETAC	-5.000
○	14.000	ELV-IB	.000	ELV-OB	3.000
□		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

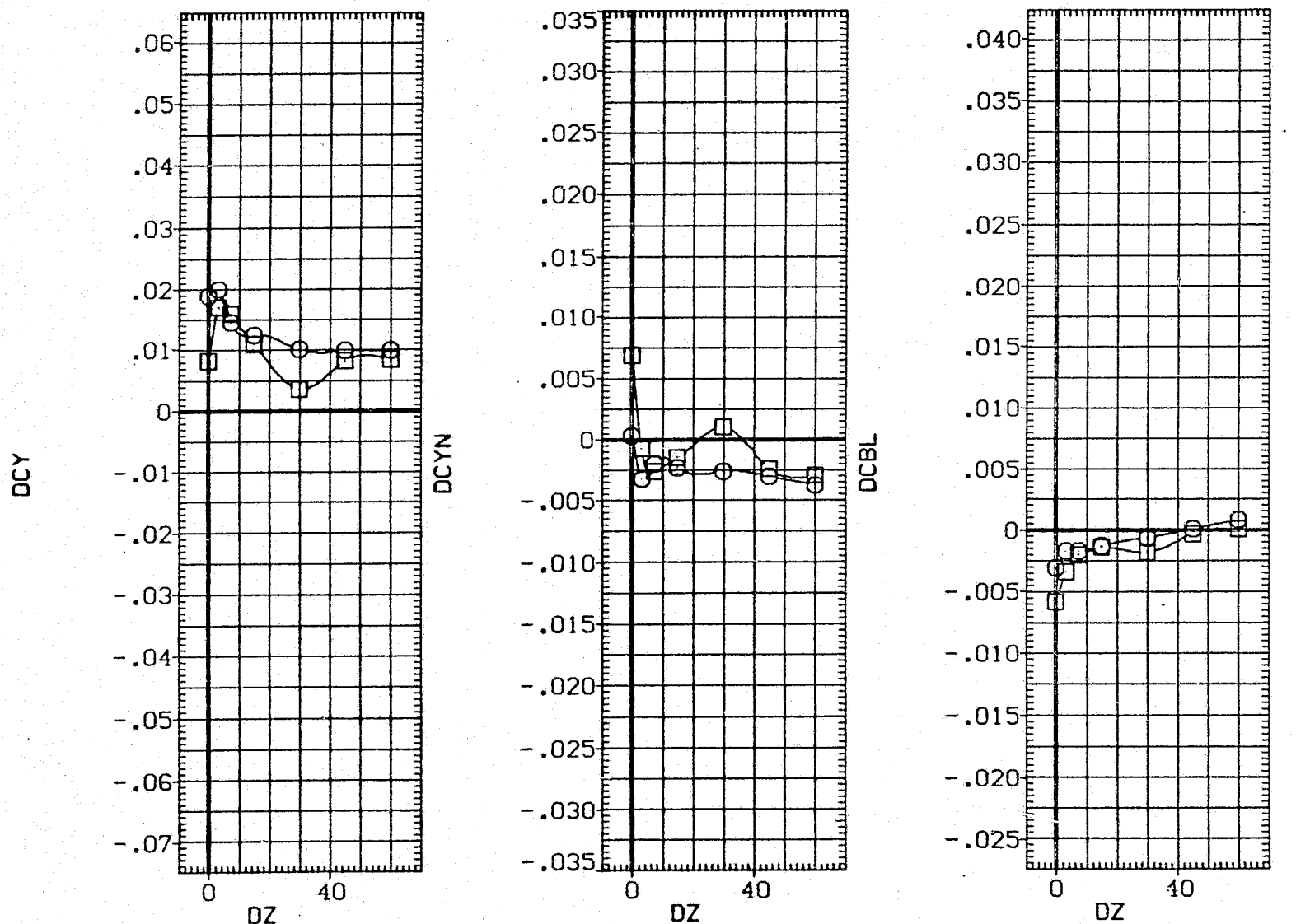


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	
○	10.000	ALPHAC	4.000	BETAC
□	14.000	ELV-1B	.000	ELV-0B
		ELEVON	5.000	MACH
		PHI	.000	DX
		DY	.000	BETA0
				-5.000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

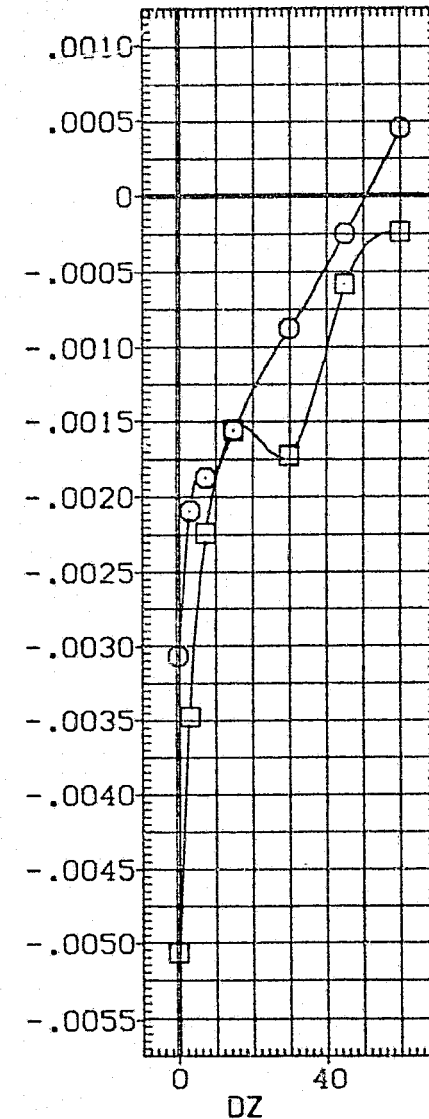
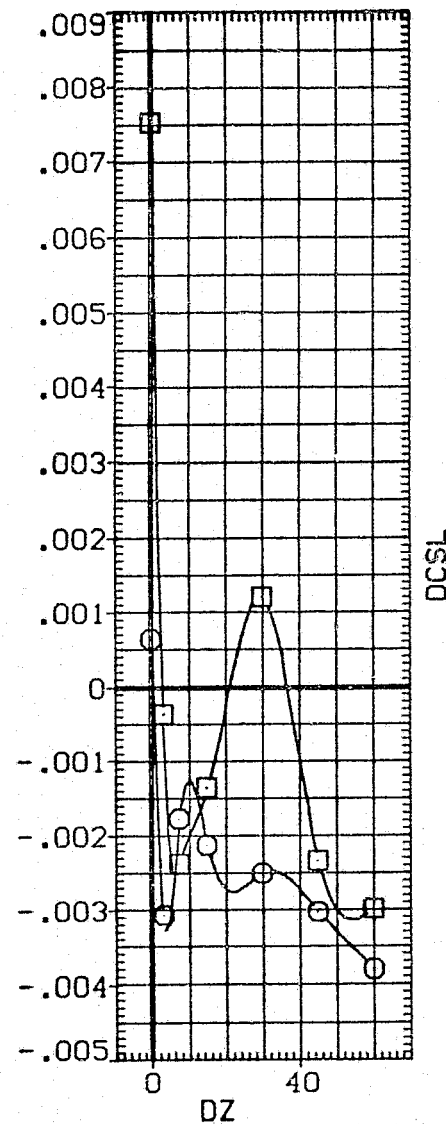
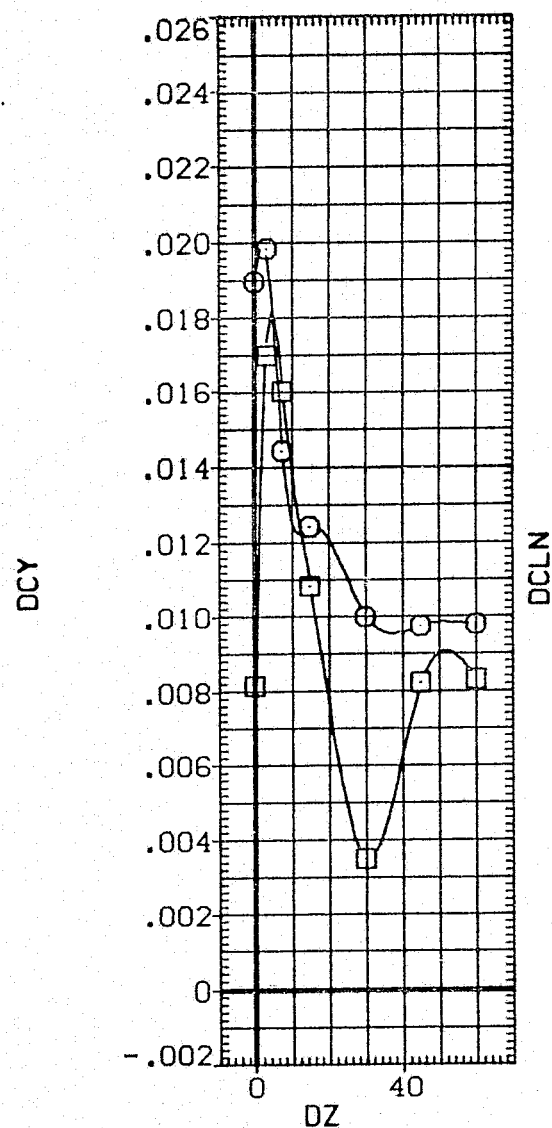


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000

ELV-1B

PARAMETRIC VALUES

.000

ELV-0B

3.000

14.000

ELEVON

5.000

MACH

.600

PHI

.000

BETA0

-5.000

BETAC

-5.000

DY

.000

DX

10.000

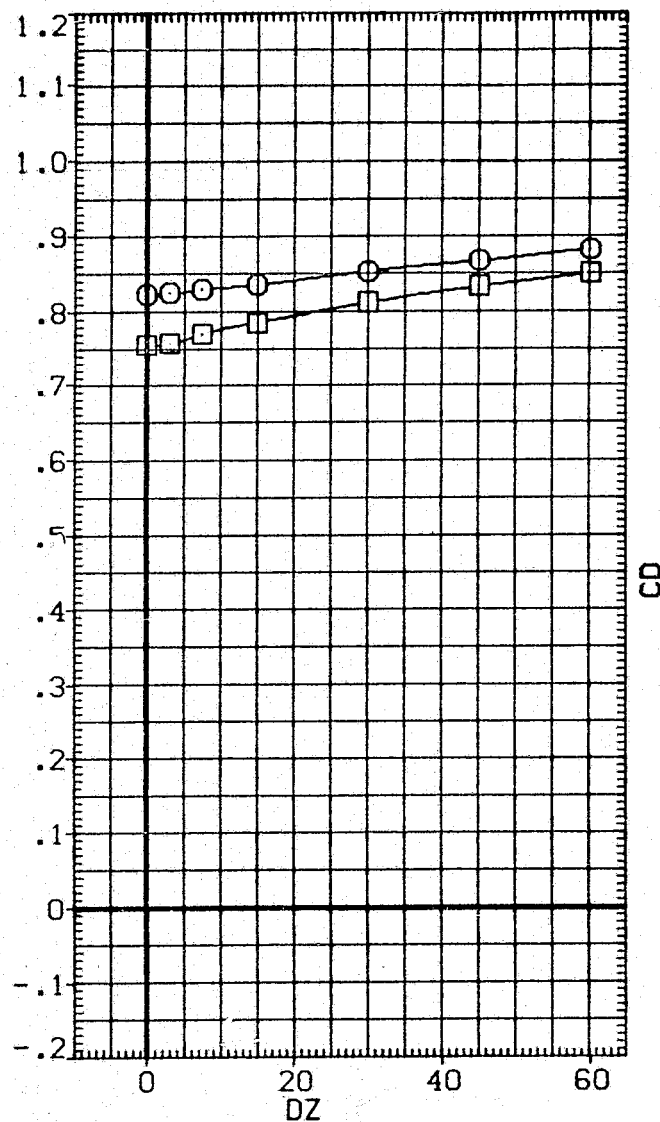
ALPHAC

8.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

CL



CD

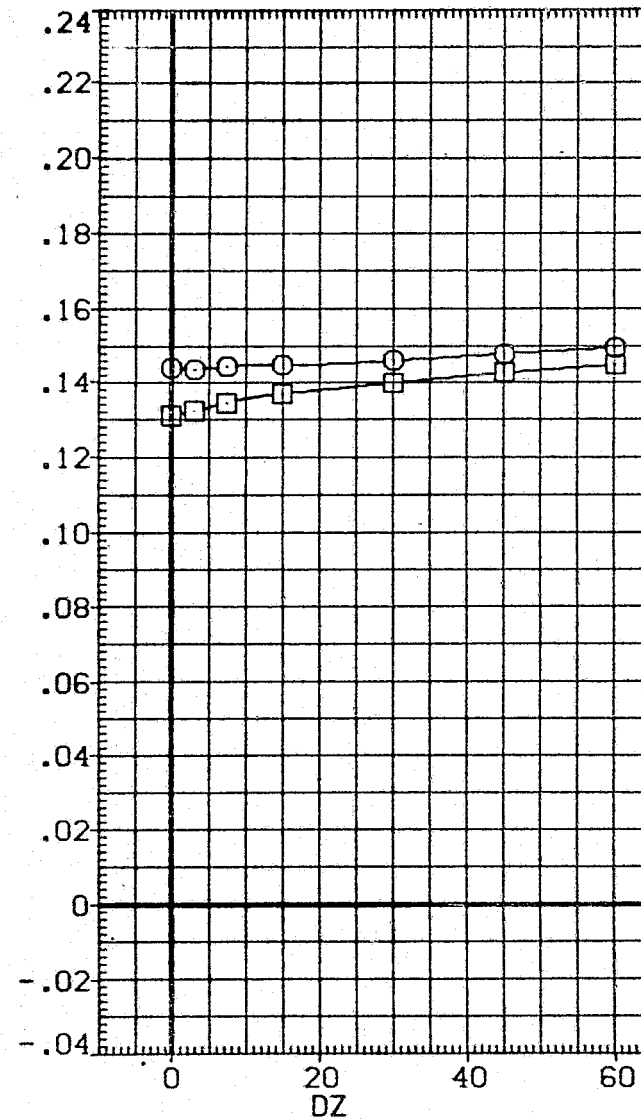


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000
14.000ELV-1B
ELEVON
PHI
BETAC
DX

PARAMETRIC VALUES

.000 ELV-0B 3.000
5.000 MACH .600
.000 BETA0 -5.000
-5.000 DY .000
10.000 ALPHAC 8.000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

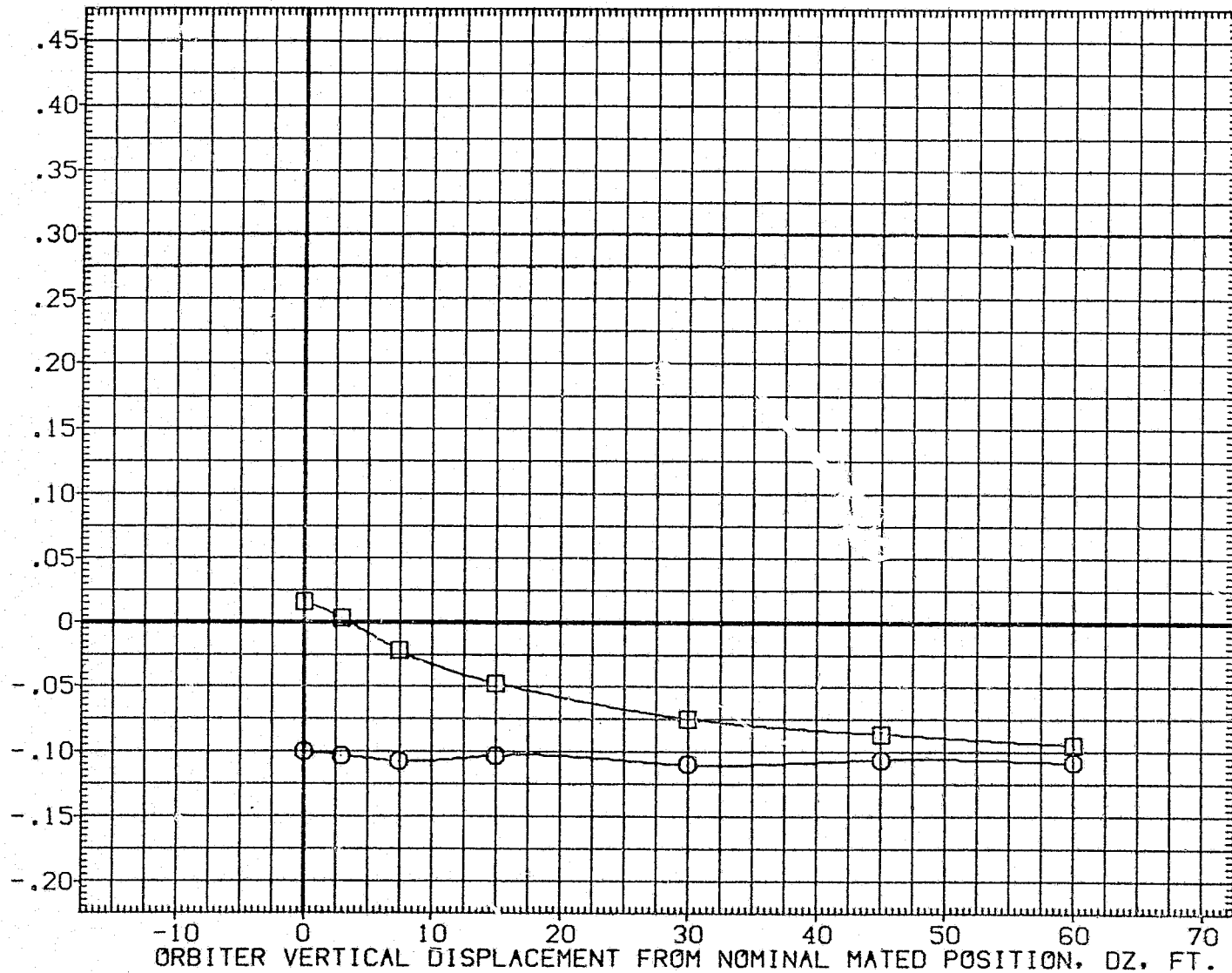


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 74 / i 01 S1

CARRIER DATA (MGN105)

SYMBOL

○

□

ALPHA0

10.000

ELV-1B

14.000

PARAMETRIC VALUES

.000

5.000

.000

-5.000

10.000

ALPHAC

.000

.600

-5.000

.000

8.000

ELV-0B

MACH

BETA0

DY

ALPHAC

.000

.600

-5.000

.000

8.000

REFERENCE INFORMATION

SREF

5500.0000

50.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

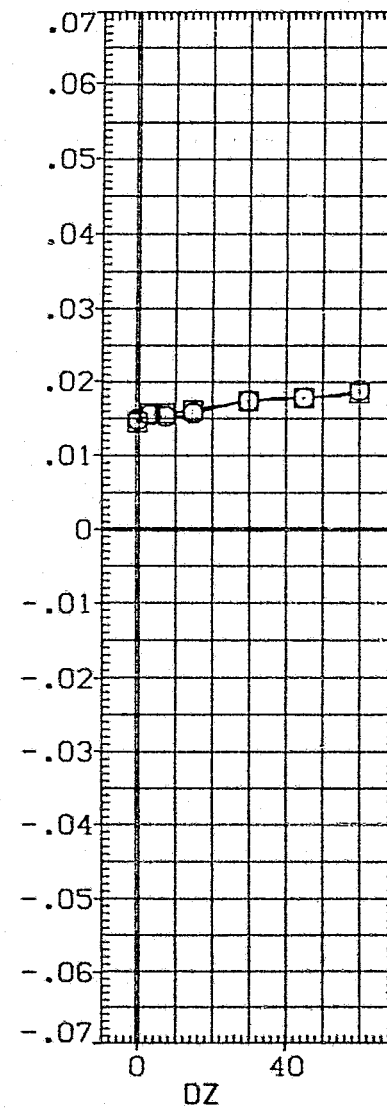
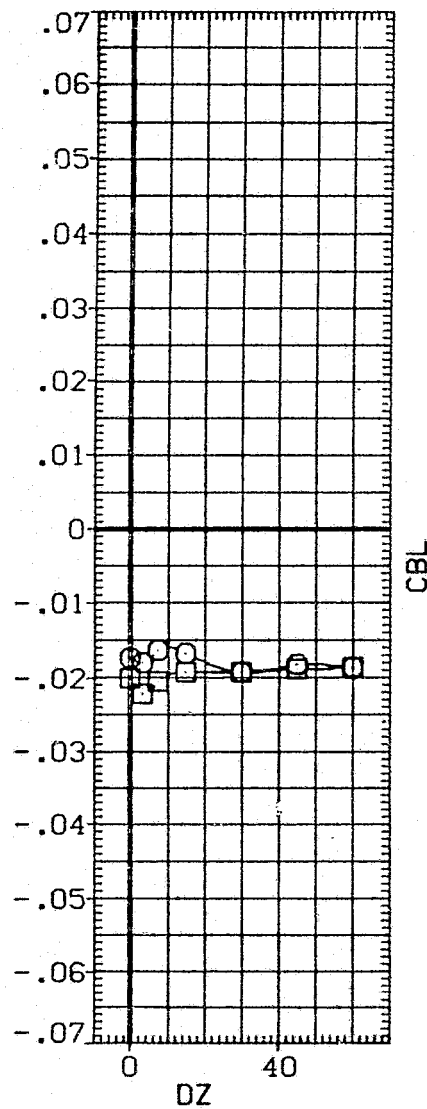
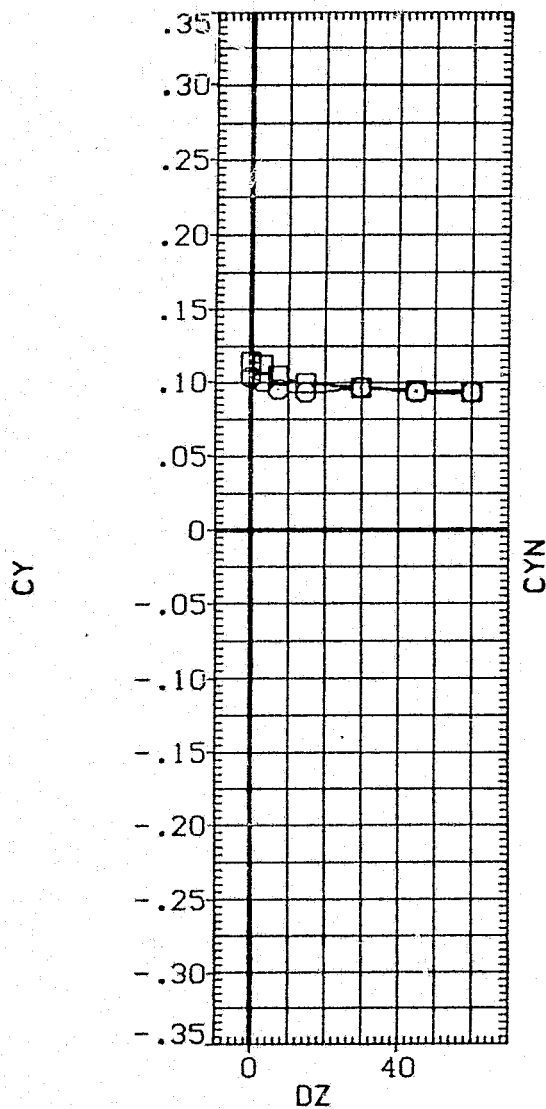


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
	10.000	ELV-IB	.000	ELV-OB	3.000
○	14.000	ELEVON	5.000	MACH	.600
□		PHI	.000	BETA0	-5.000
		BETAC	-5.000	DY	.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

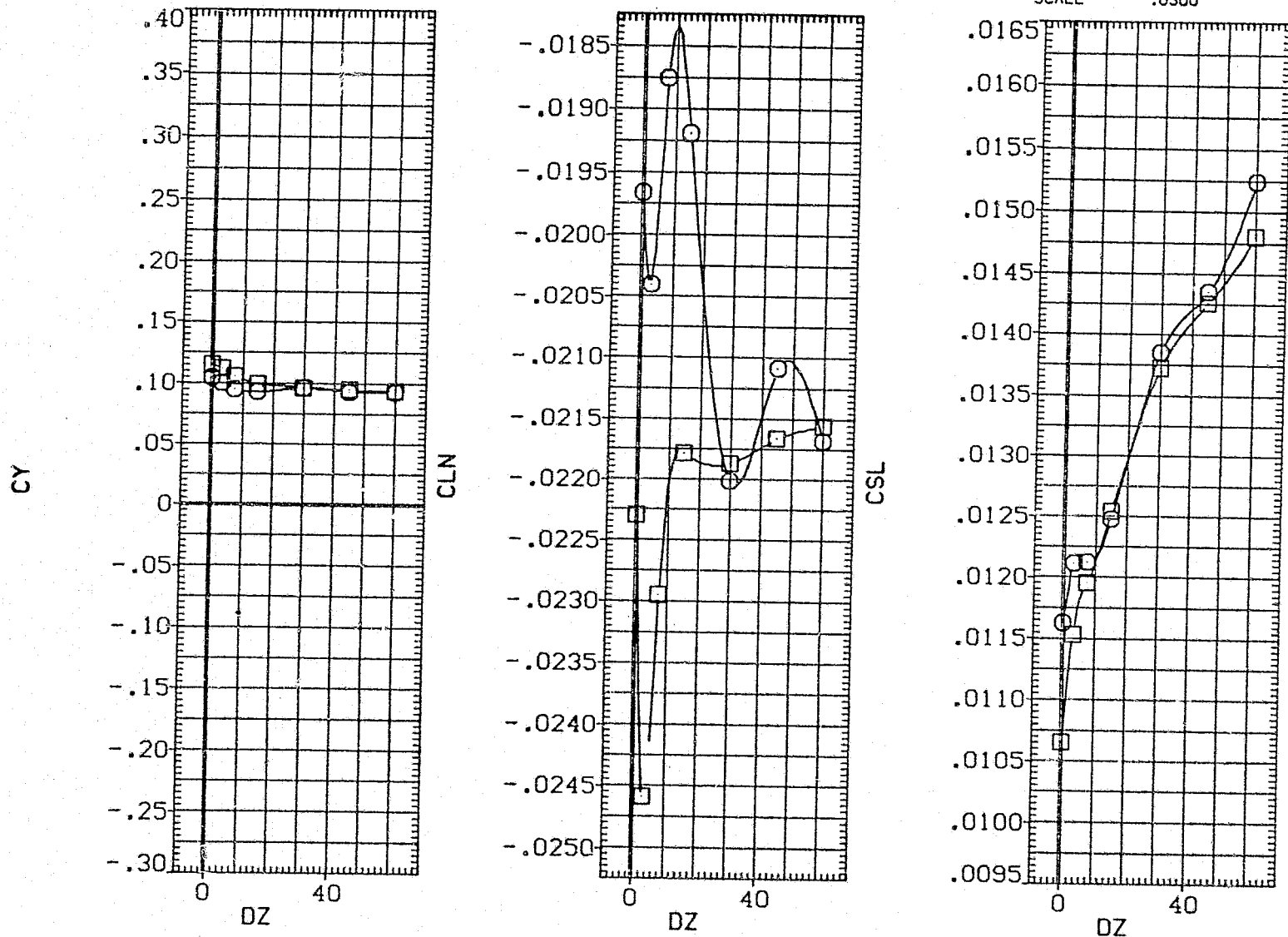


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-18

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

.000

.000

BETAC

ELV-08

MACH

DX

BETA0

-5.000

3.000

.600

10.000

-5.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

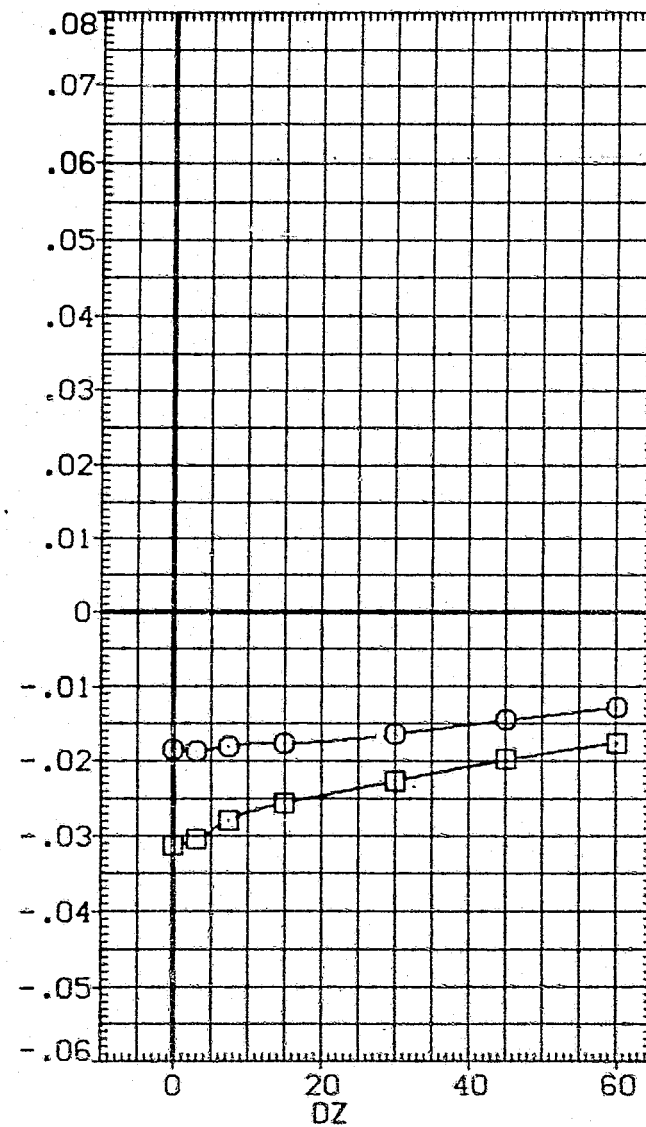
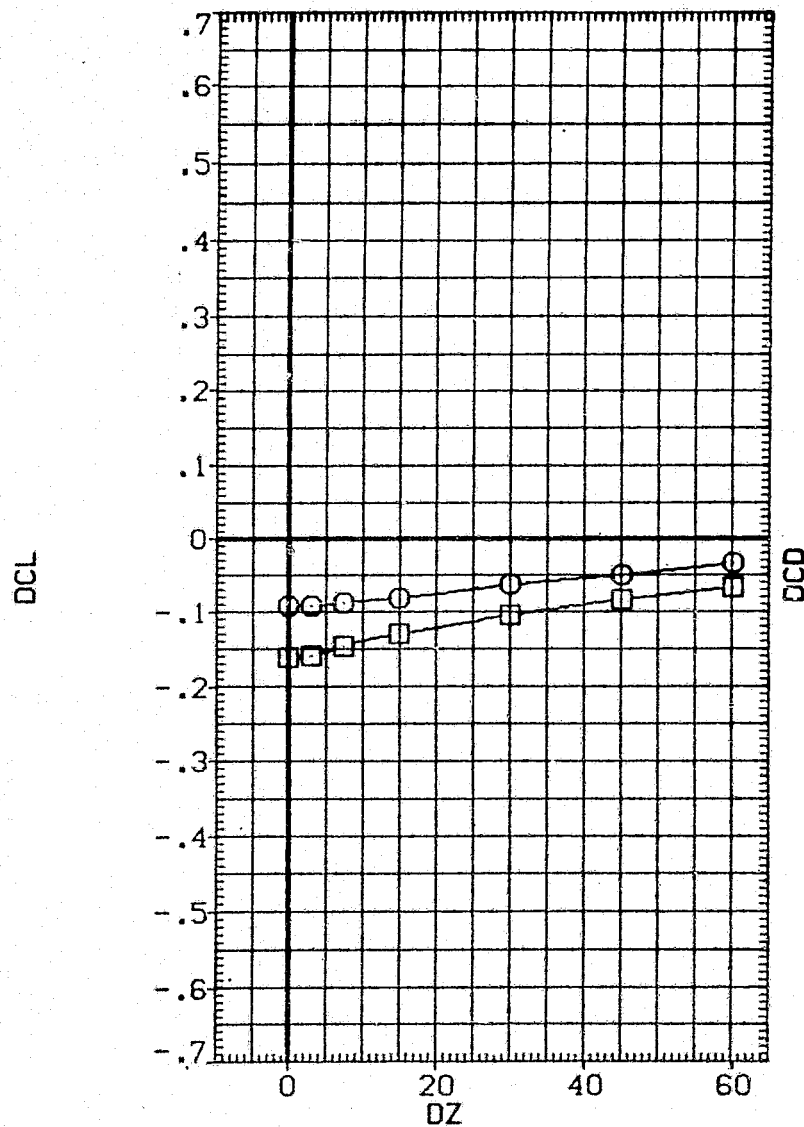


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES				REFERENCE INFORMATION		
○	10.000	ALPHAC	8.000	BETAC	-5.000	SREF	5500.0000	50.FT.
□	14.000	ELV-1B	.000	ELV-0B	3.000	LREF	327.7800	IN.
		ELEVON	5.000	MACH	.600	BREF	2348.0400	IN.
		PHI	.000	DX	10.000	YMRP	1339.9000	IN.XC
		DY	.000	BETA0	-5.000	YMRP	.0000	IN.YC
						ZMRP	190.8000	IN.ZC
						SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

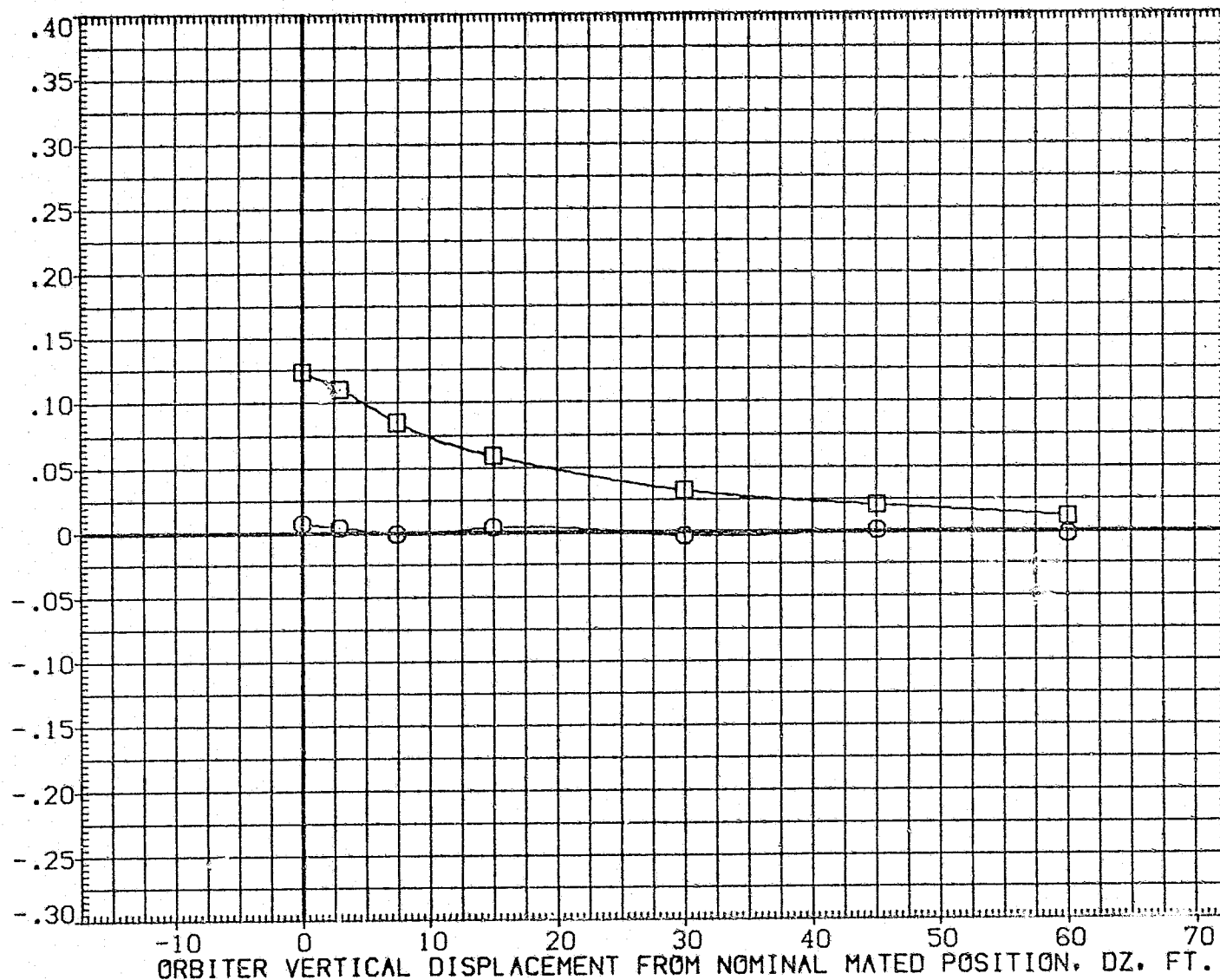


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 (747/1 01 S1) - (747/1)

D/S (105 - 034)(UGN105)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000 BETAC

.000 ELV-OB

5.000 MACH

.000 DX

.000 BETA0

-5.000

3.000

.600

10.000

-5.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

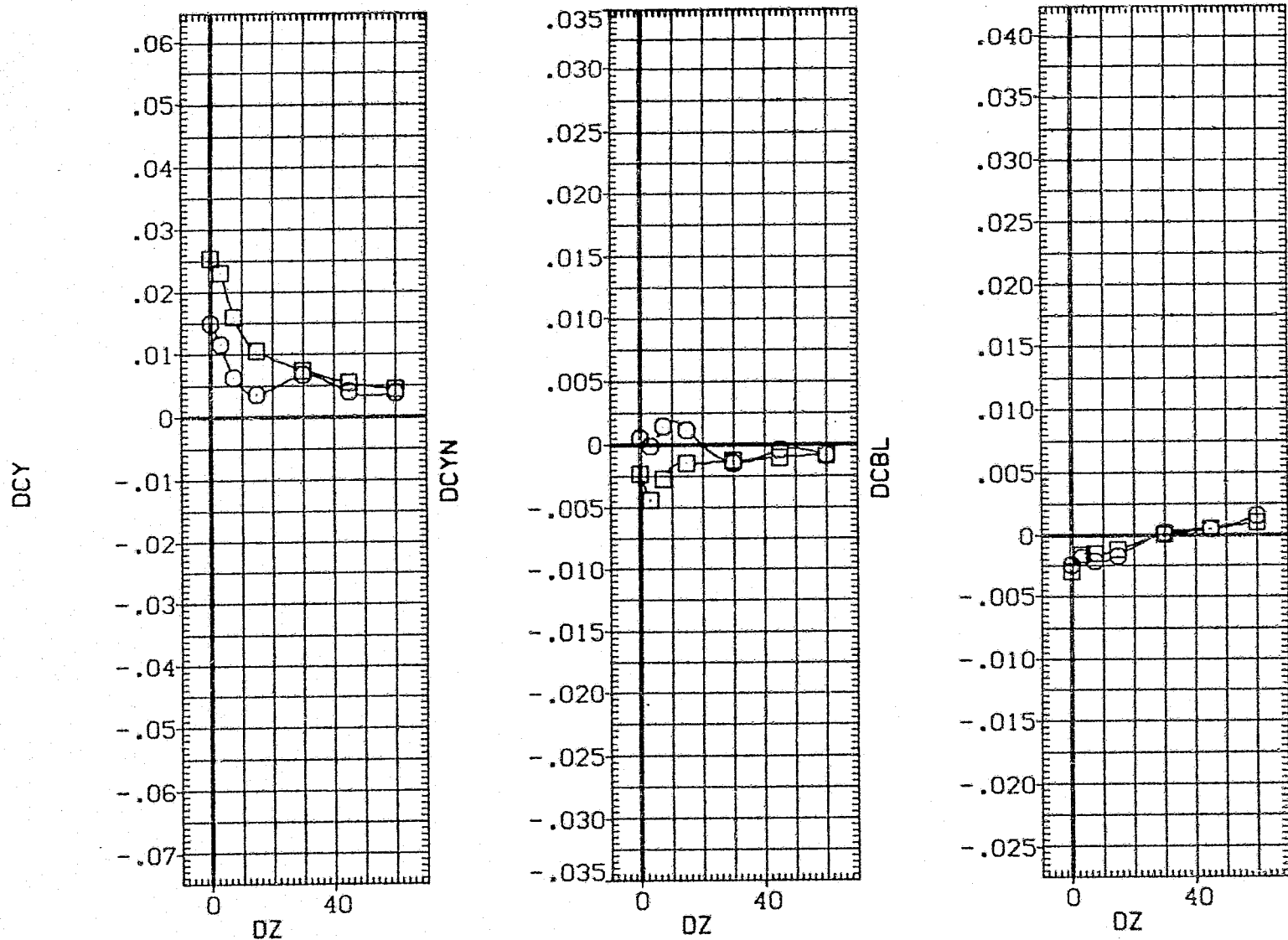
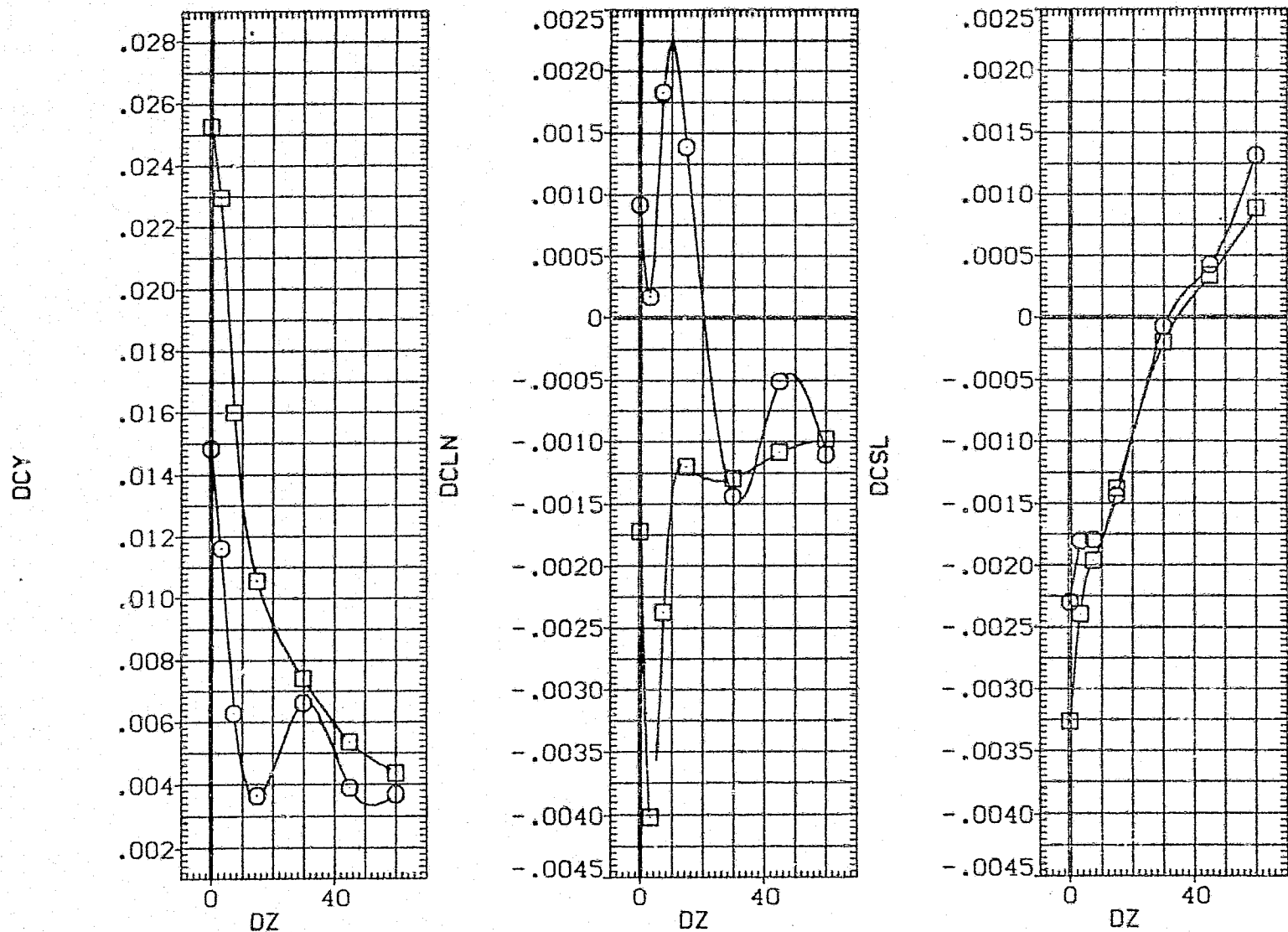


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	-5.000
□	14.000	ELV-18	.000	ELV-08	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT $\Phi = 0$)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	-5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

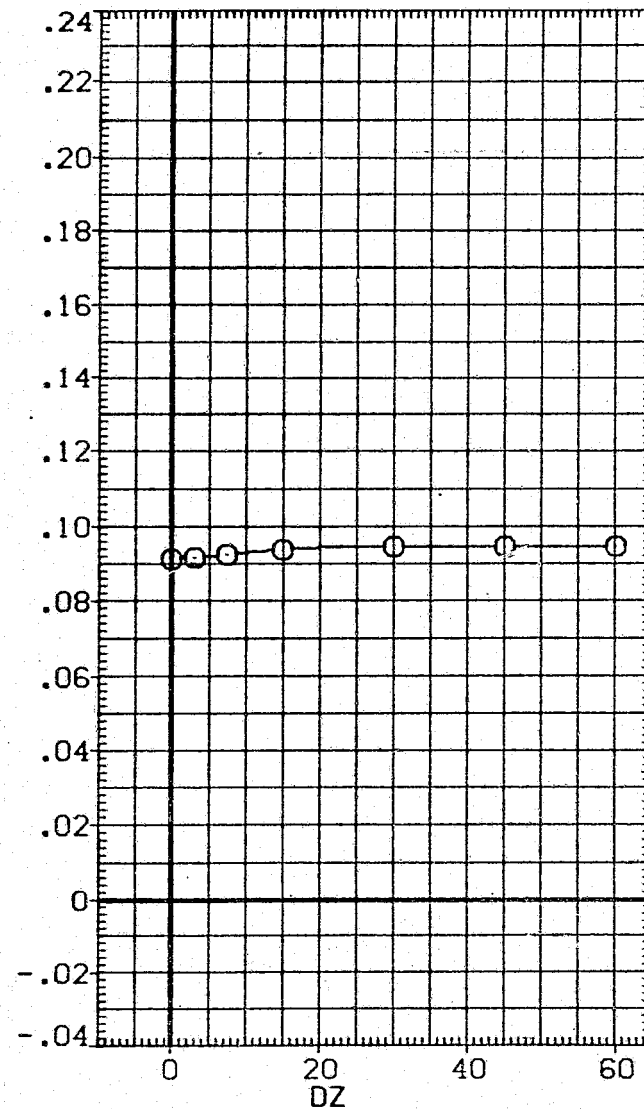
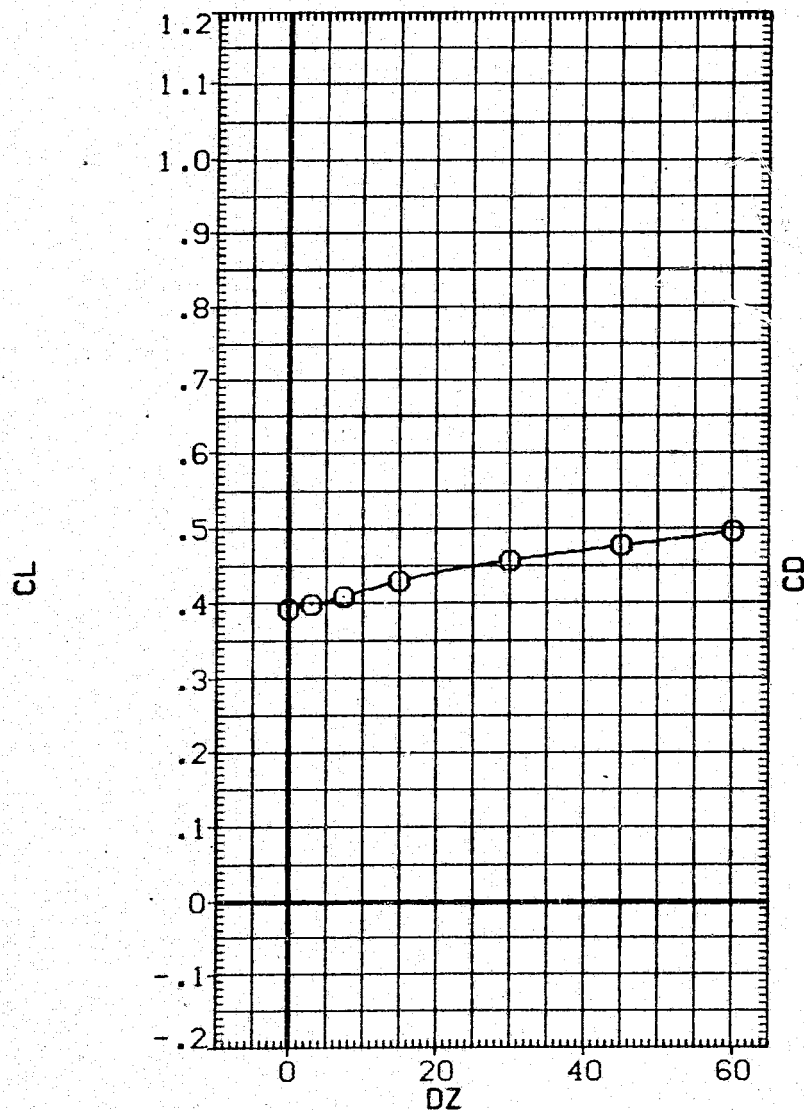


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	-5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

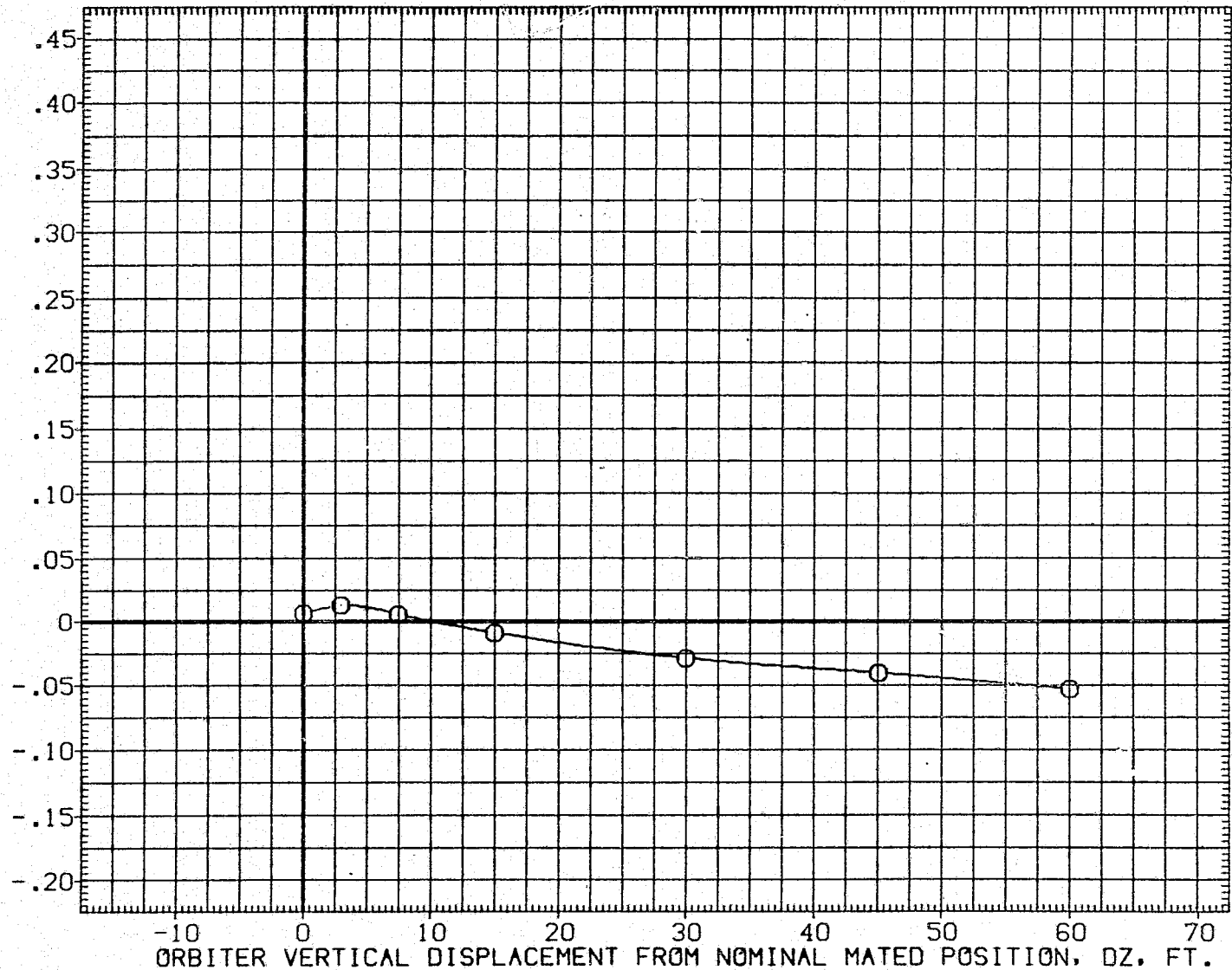


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ELV-1B .000	ELV-0B 3.000
		ELEVON 5.000	MACH .600
		BETA0 -5.000	BETAC -5.000
		PHI .000	DY 10.000
		DX .000	ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	190.8000	IN.ZC
SCALE	.0300	

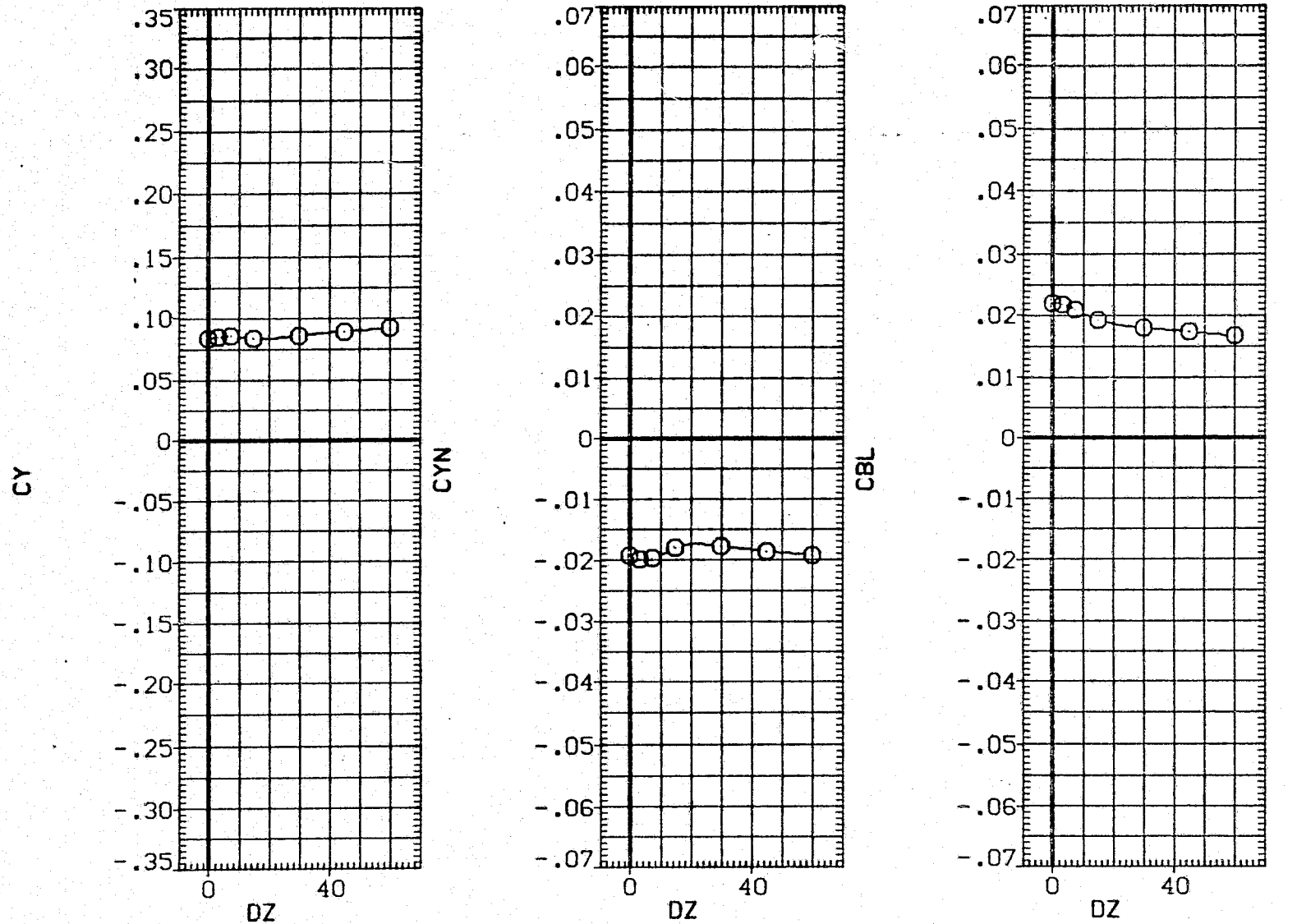


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	-5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

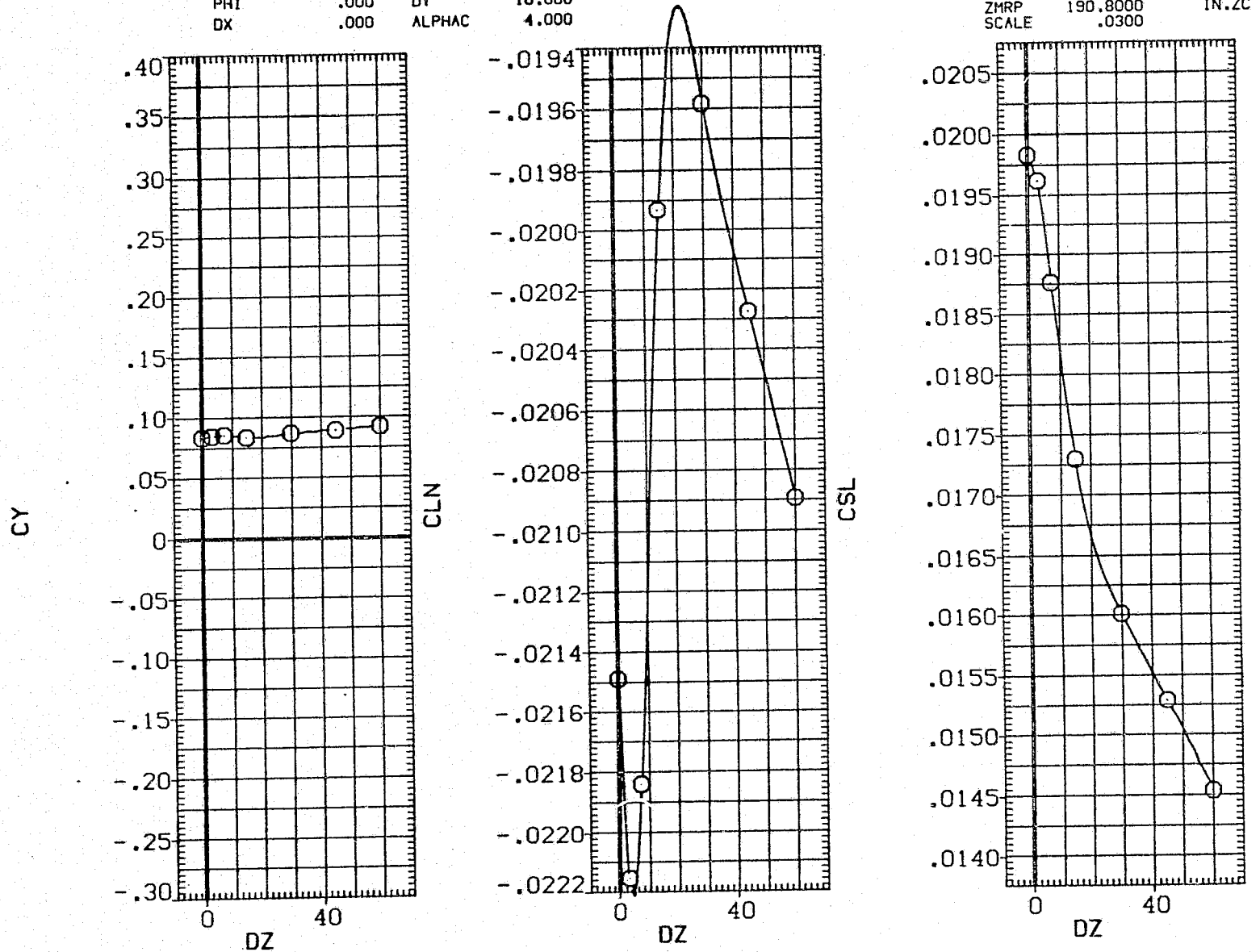


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 (747/1 01 S1) - (747/1)

D/S (106 - 034) (UGN106)

SYMBOL
OALPHA0
10.000

PARAMETRIC VALUES

ALPHA0	4.000	BETAC	-5.000
ELV-1B	.000	ELV-0B	3.000
ELEVON	5.000	MACH	.600
PHI	.000	DX	.000
DY	10.000	BETA0	-5.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

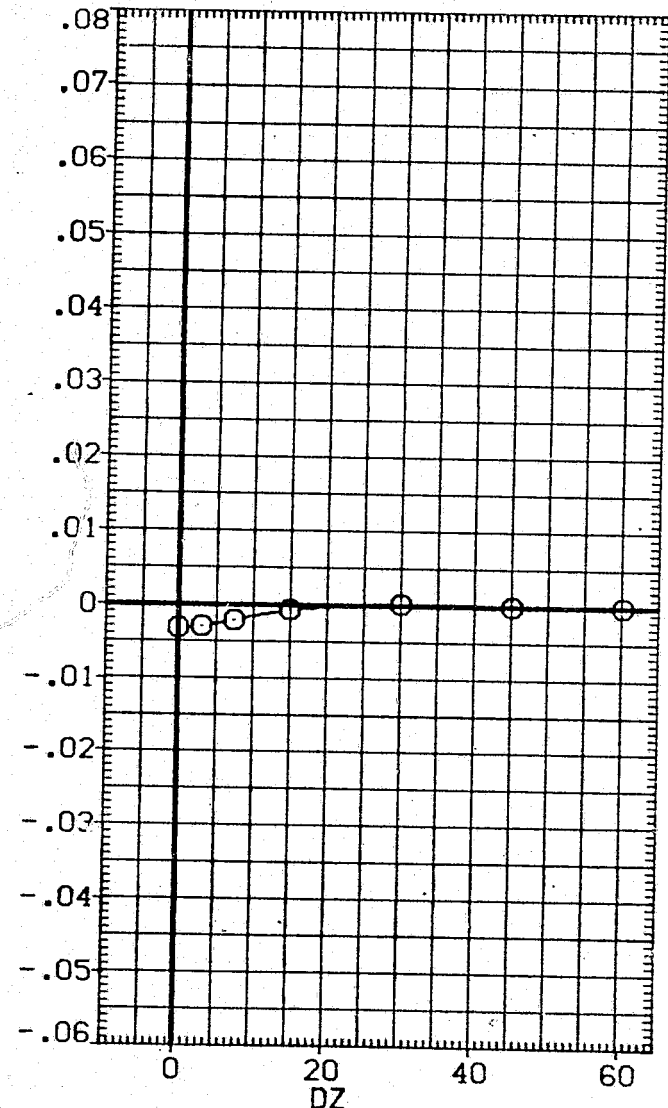
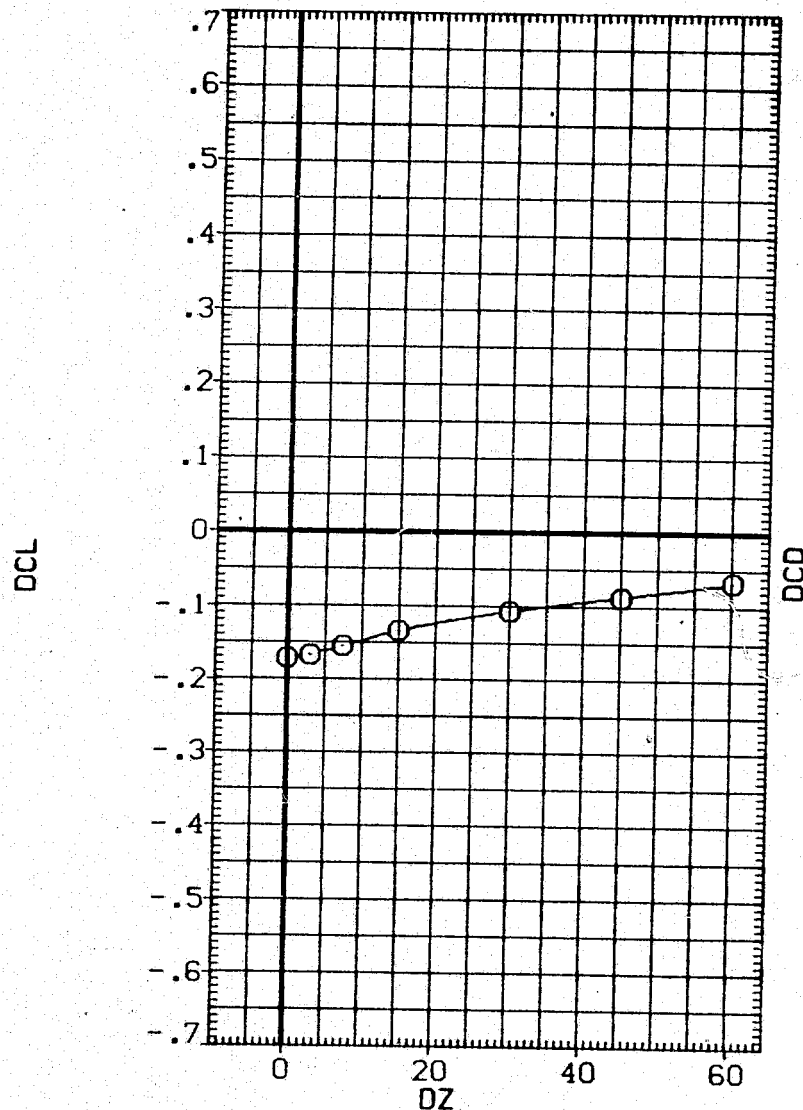


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○

ALPHA0

10.000

ALPHAC

PARAMETRIC VALUES

4.000 BETAC -5.000

ELV-IB

.000 ELV-OB 3.000

ELEVON

5.000 MACH .600

PHI

.000 DX .000

DY

10.000 BETA0 -5.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

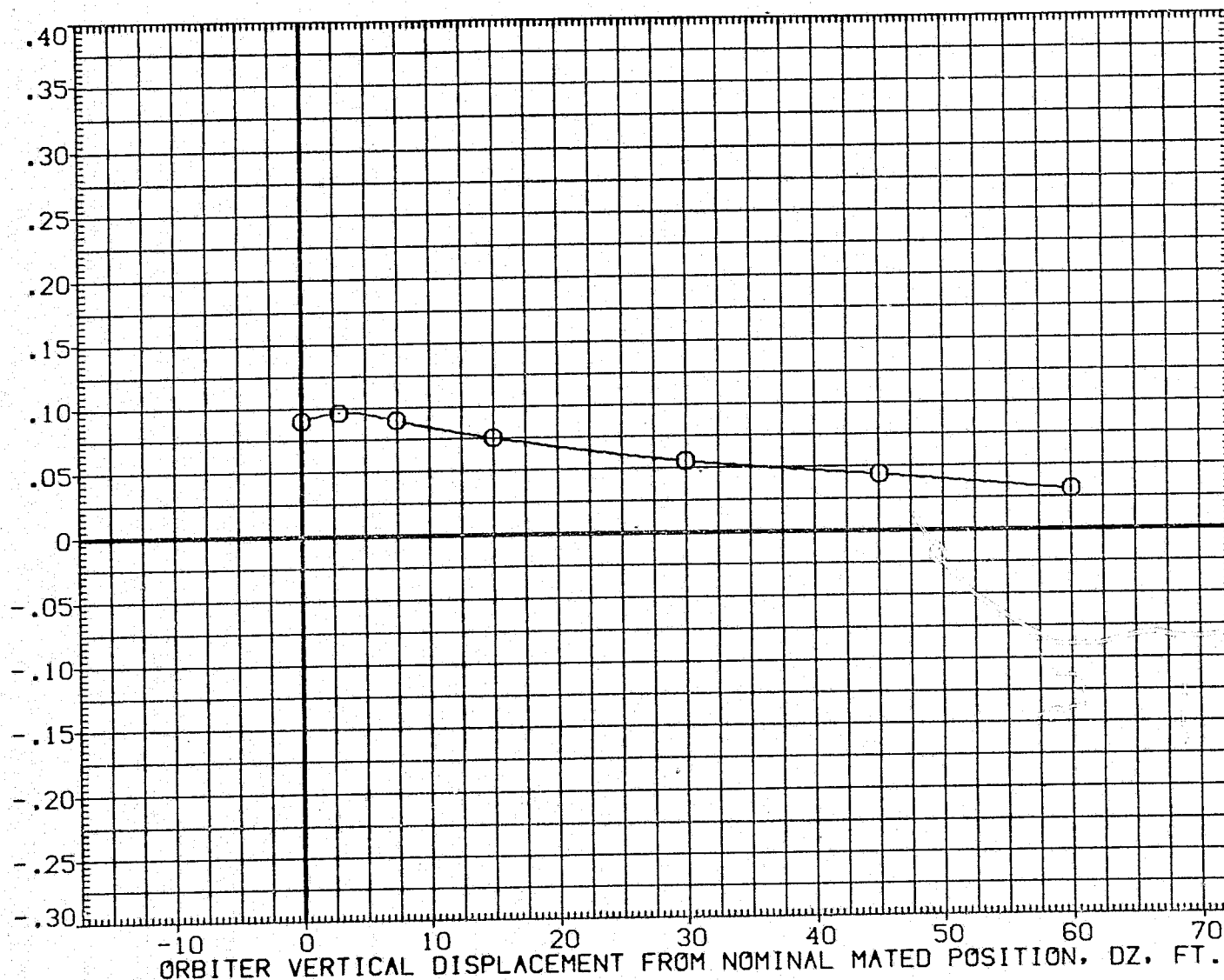


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	-5.000
		ELV-10	.000	ELV-08	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

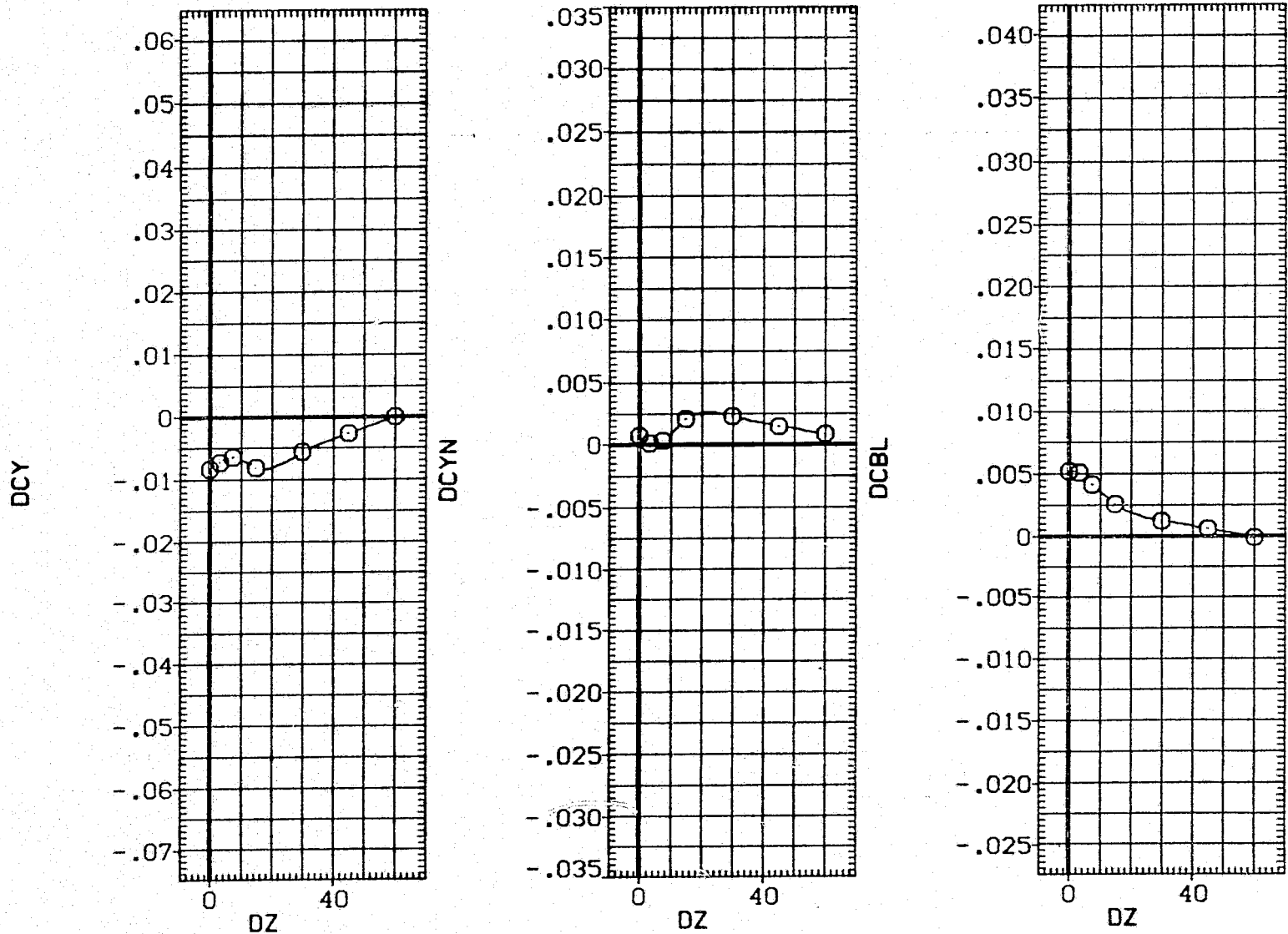


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	-5.000
		ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

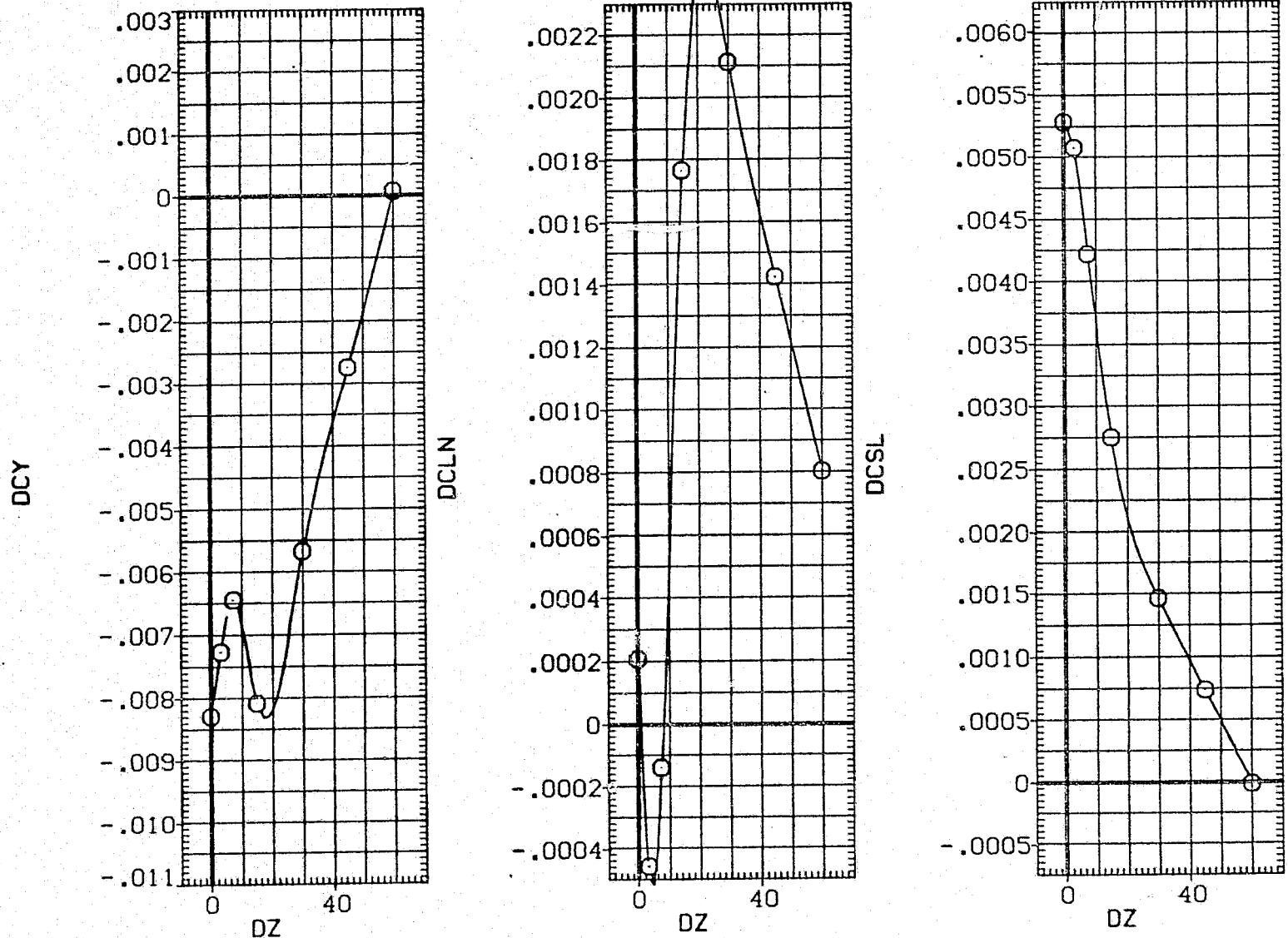


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	-5.000	DY	10.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

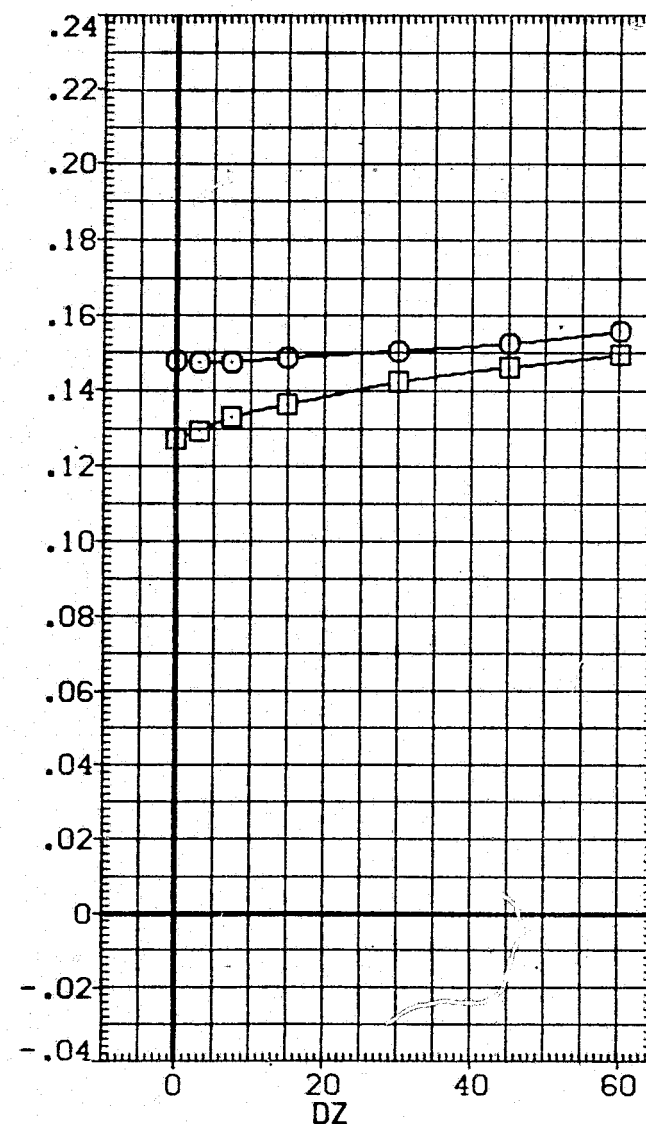
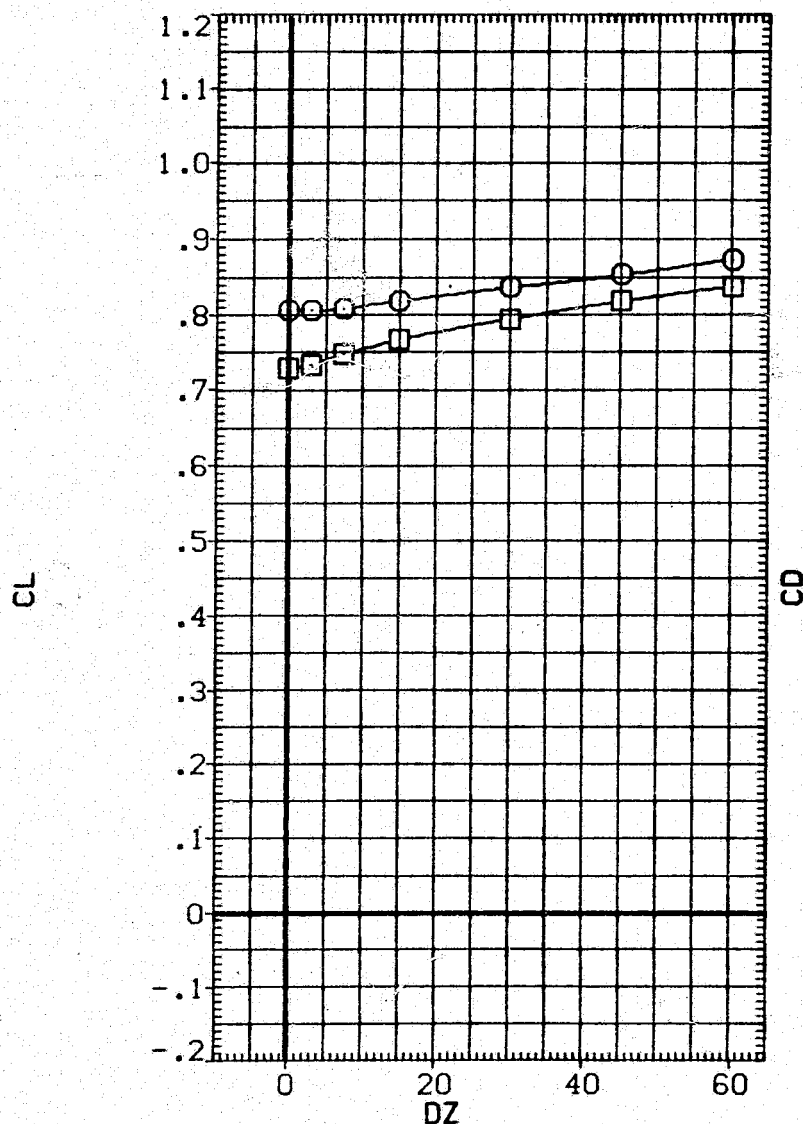


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0
10.000
14.000

ELV-1B
ELEVON
PHI
BETAC
DX

PARAMETRIC VALUES

.000	ELV-0B	3.000
5.000	MACH	.600
.000	BETAC	-5.000
-5.000	DY	10.000
10.000	ALPHAC	4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

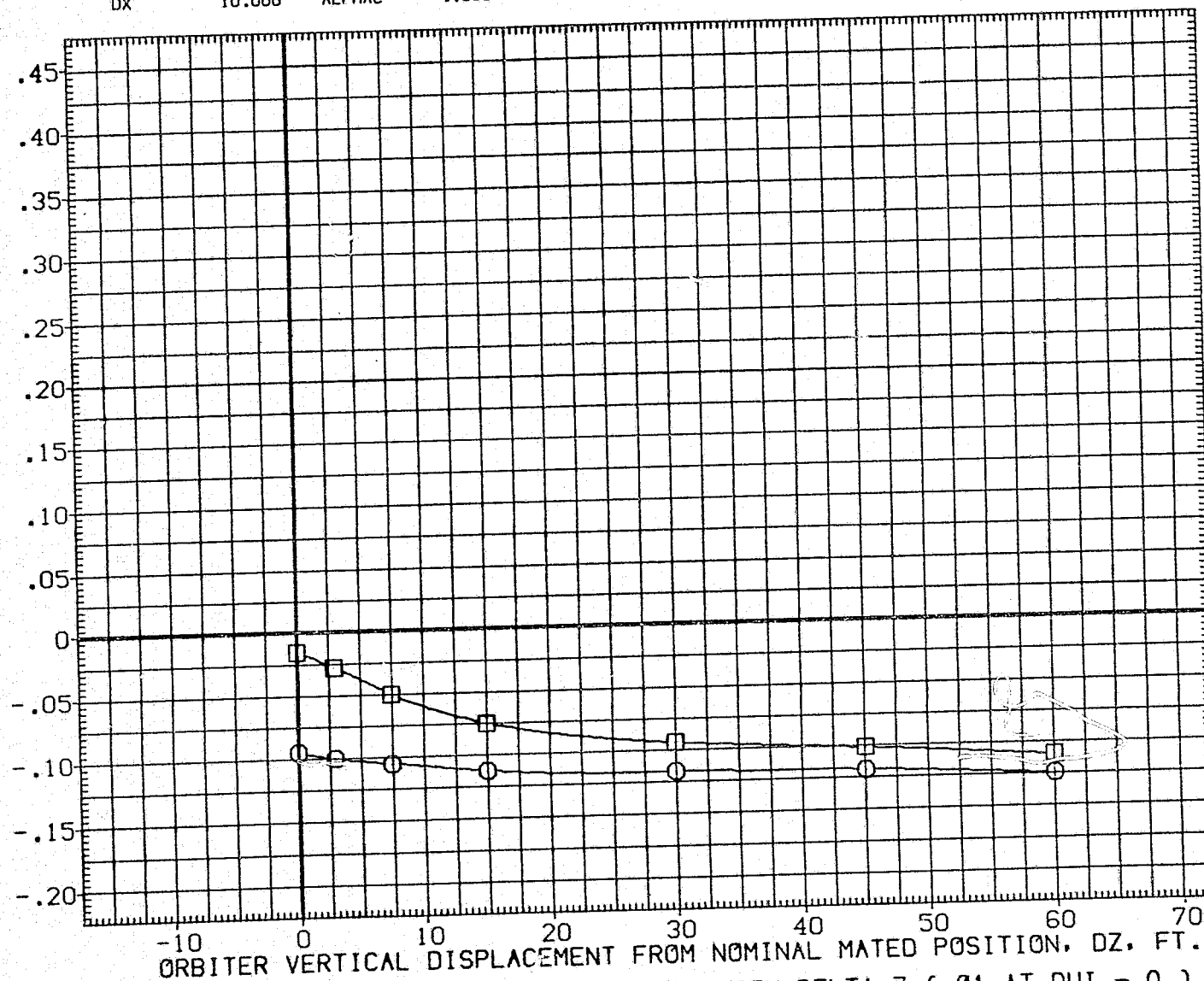


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN107)

SYMBOL



ALPHA0

10.000

ELV-1B

PARAMETRIC VALUES

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

PHI

.000

BETA0

-5.000

BETAC

-5.000

DY

10.000

DX

10.000

ALPHAC

4.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

CY

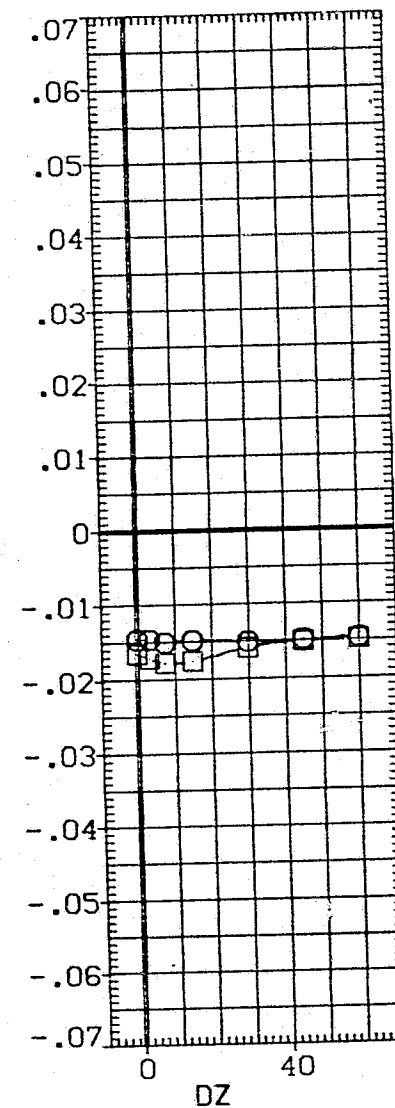
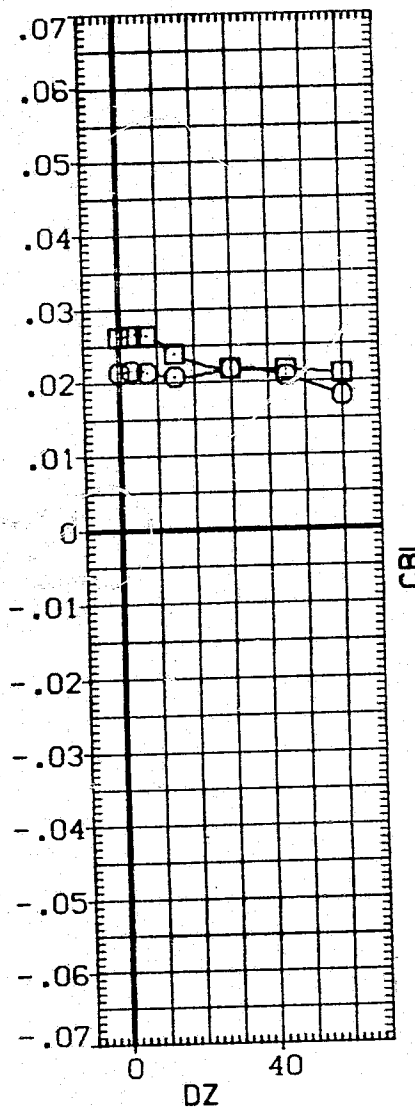
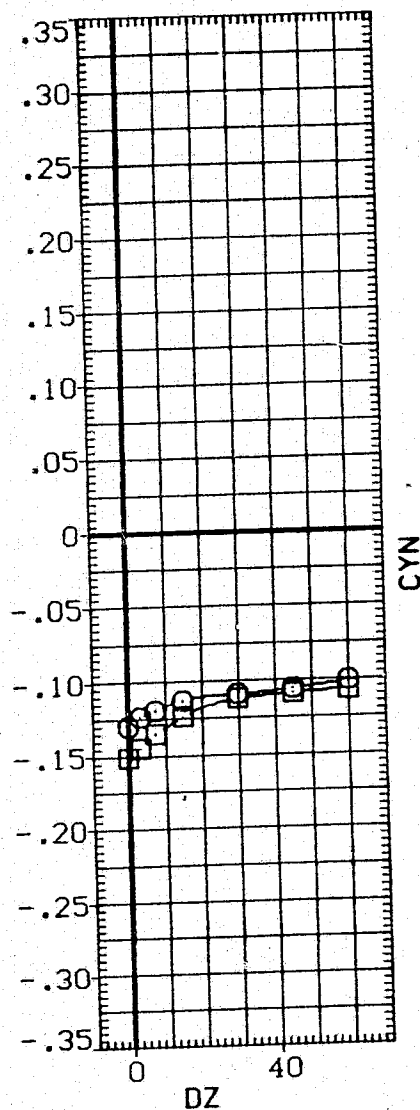


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	ELEVON	.000	3.000
□	14.000	PHI	5.000	.600
		BETAC	.000	BETA0
		DX	-5.000	DY
			10.000	ALPHAC
			4.000	

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

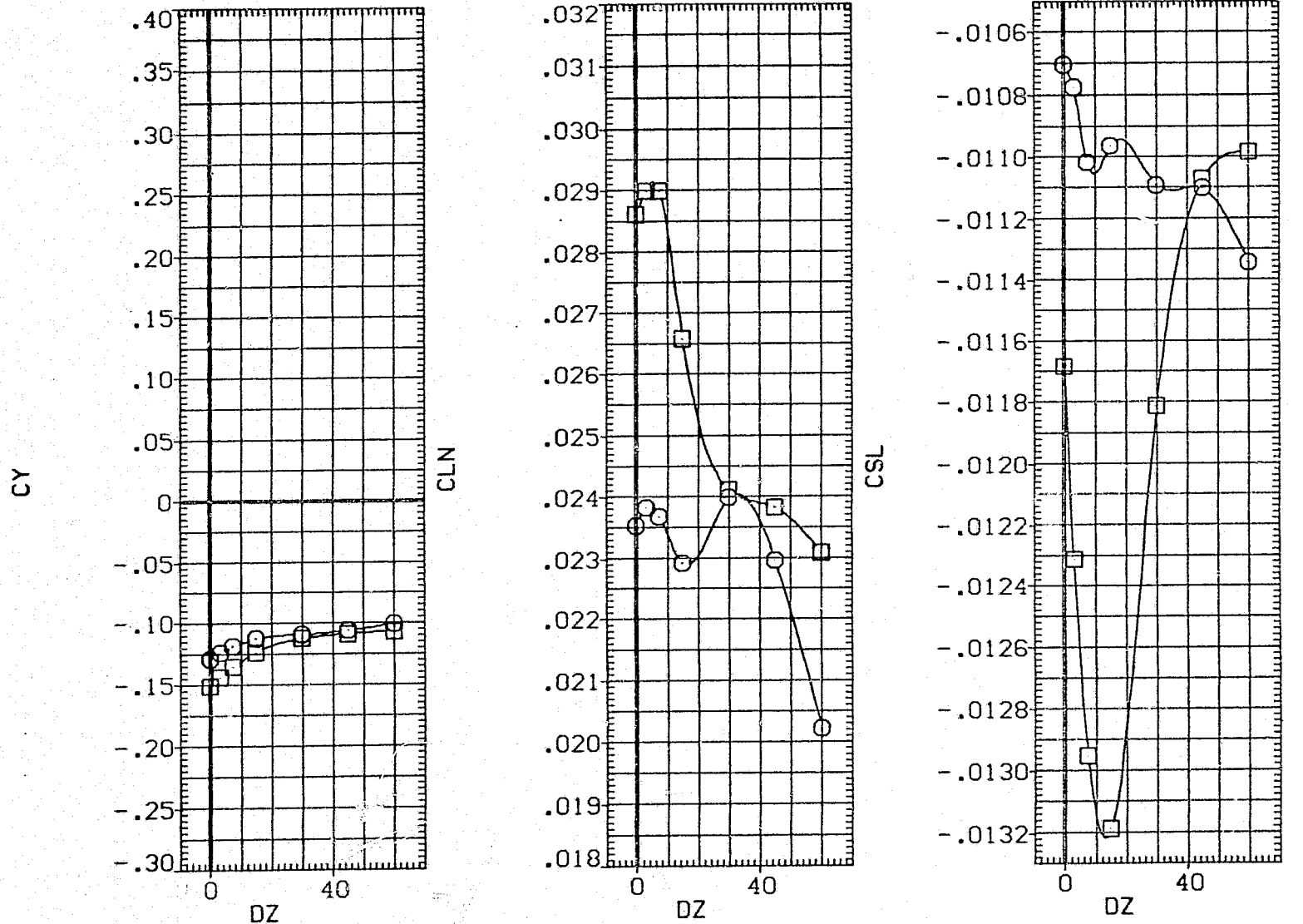


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHA0	4.000	BETAC	-5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.XC
YMRF	.0000	IN.YC
ZMRF	150.8000	IN.ZC
SCALE	.0300	

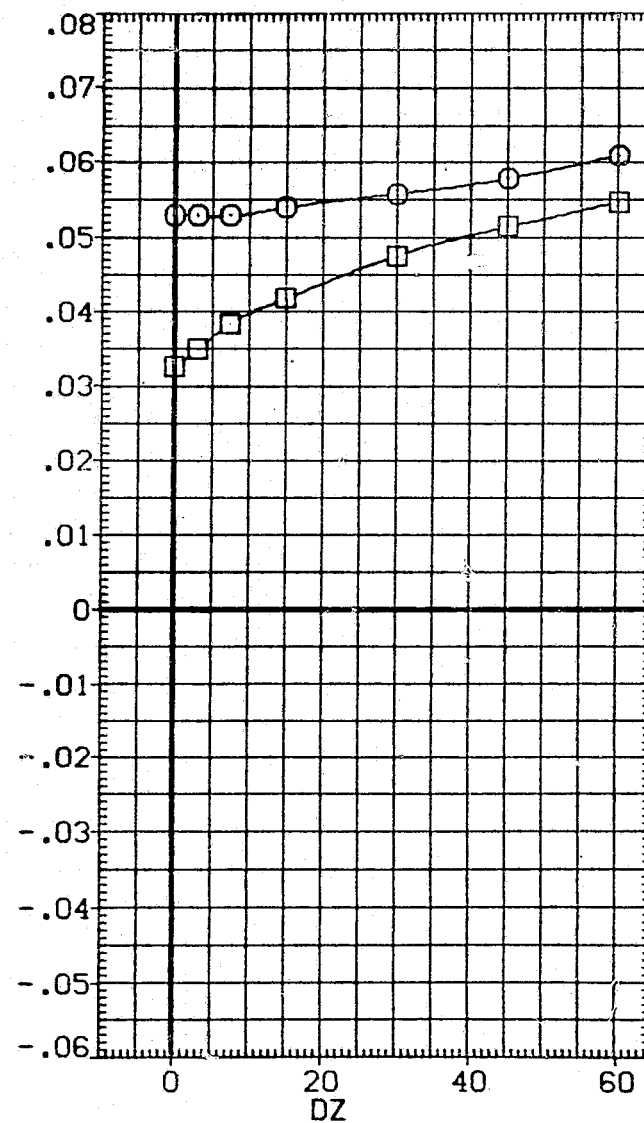
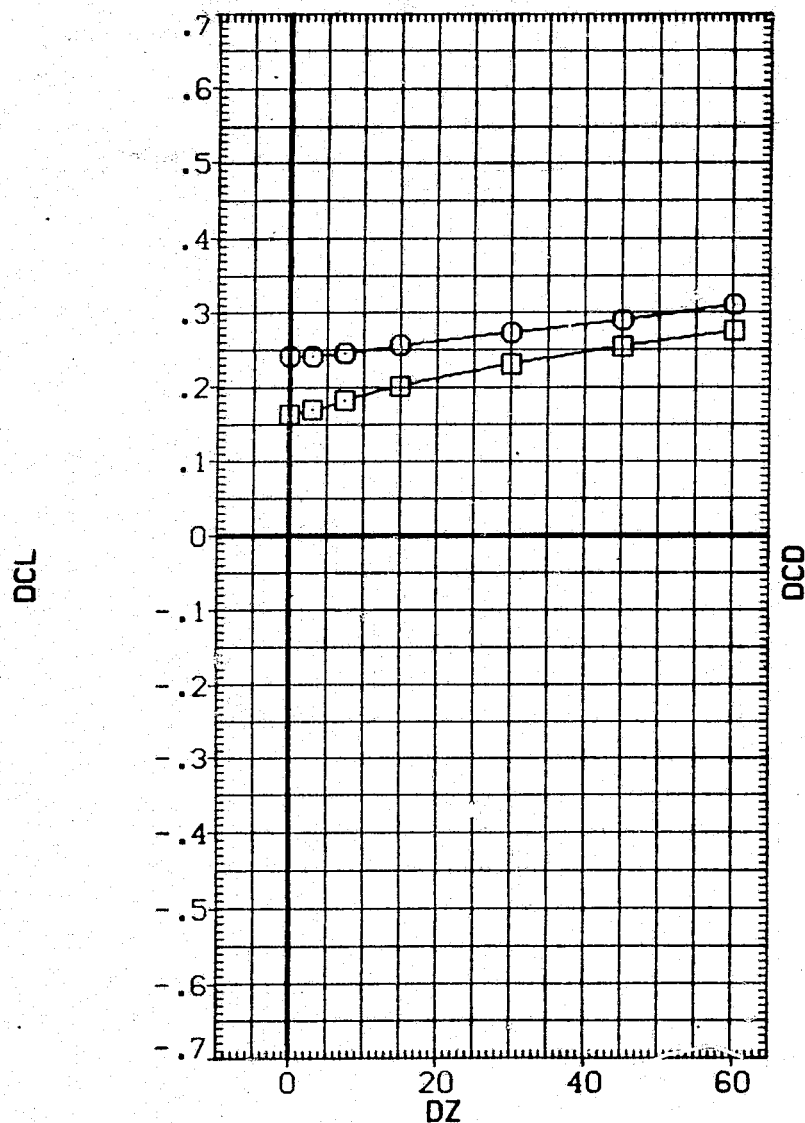


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

ALPHA0
10.000
14.000ALPHAC
ELV-18
ELEVON
PHI
DY

PARAMETRIC VALUES

4.000	BETAC	-5.000
.000	ELV-08	3.000
5.000	MACH	.600
.000	DX	10.000
10.000	BETA0	-5.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

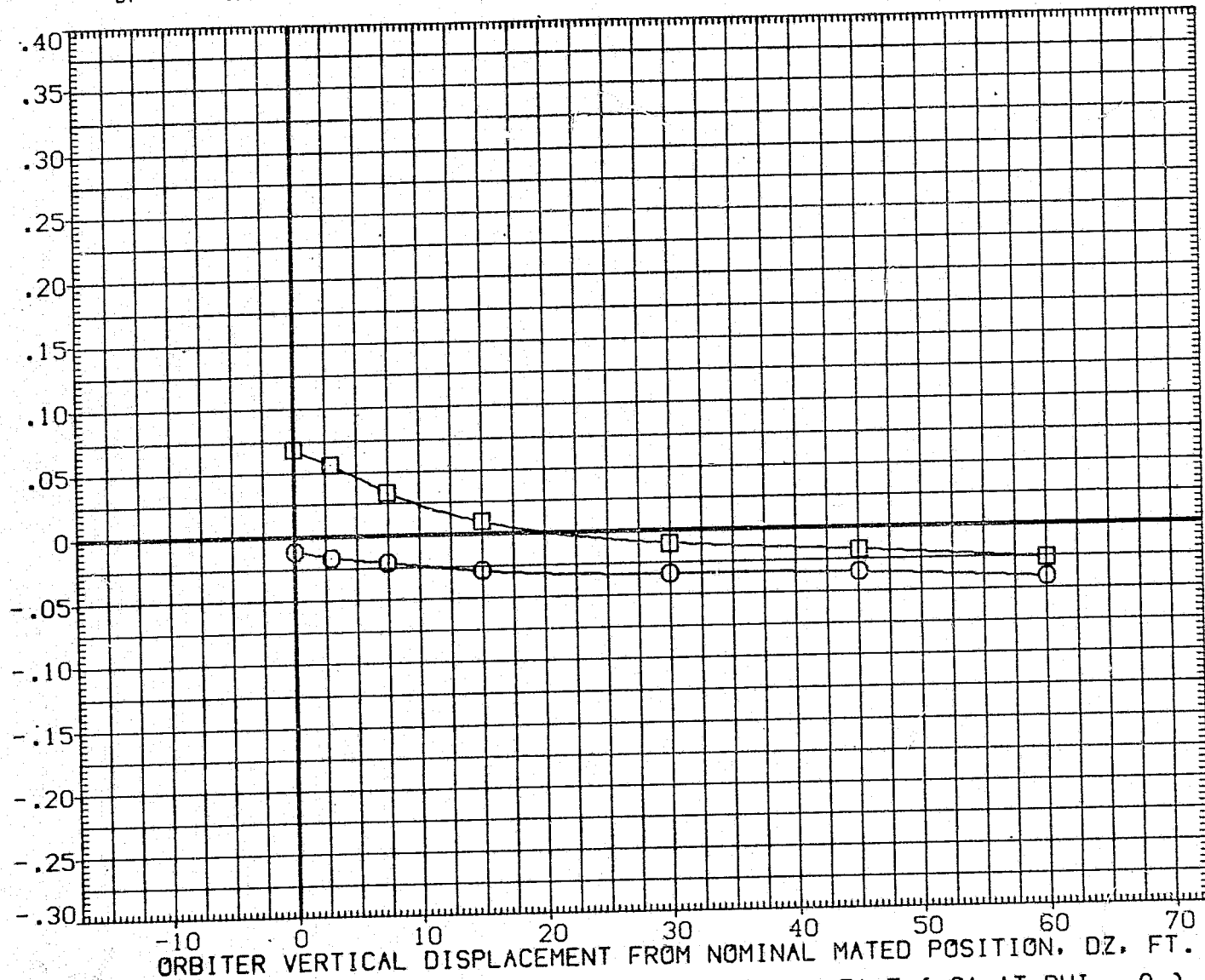


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC -5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

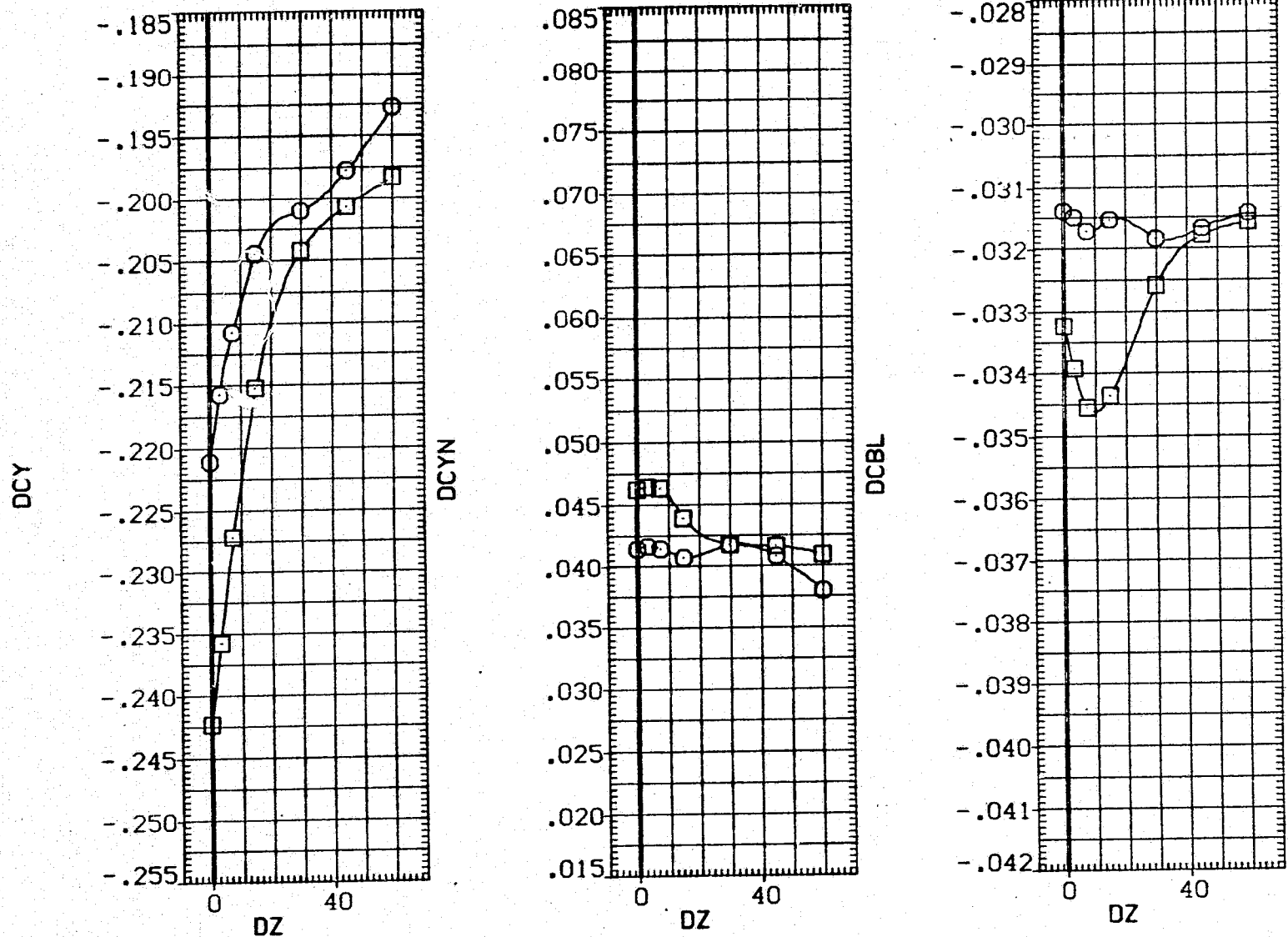


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL
○
□ALPHA0
10.000
14.000ALPHAC
ELV-1B
ELEVON
PHI
DYPARAMETRIC VALUES
4.000
.000
5.000
.000
10.000
BETAC
ELV-0B
MACH
DX
BETA0-5.000
3.000
.600
10.000
-5.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

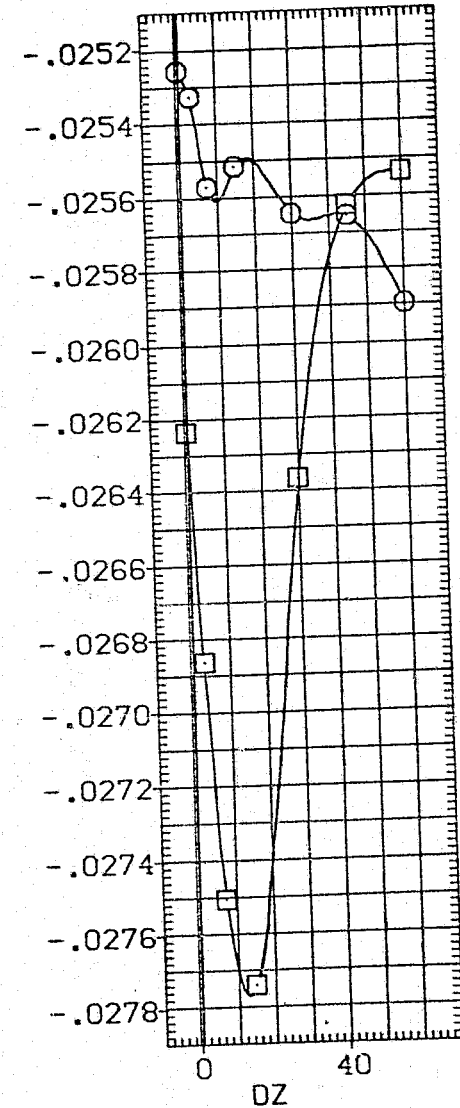
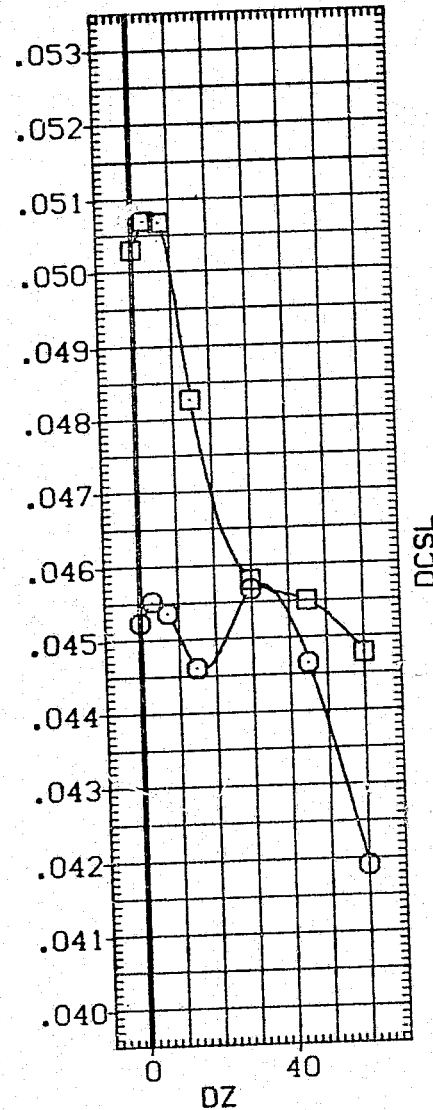
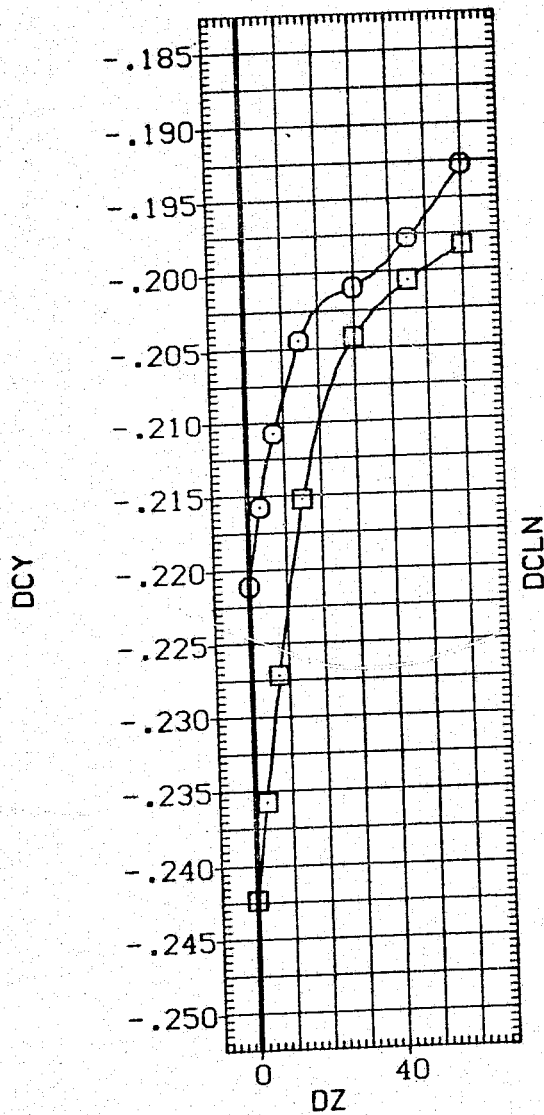


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA(MGN108)

SYMBOL



ALPHA0

10.000

14.000

ELV-1B

ELEVON

PHI

BETAC

DX

PARAMETRIC VALUES

.000

5.000

.000

-5.000

10.000

ELV-0B

MACH

BETA0

DY

ALPHAC

3.000

.600

-5.000

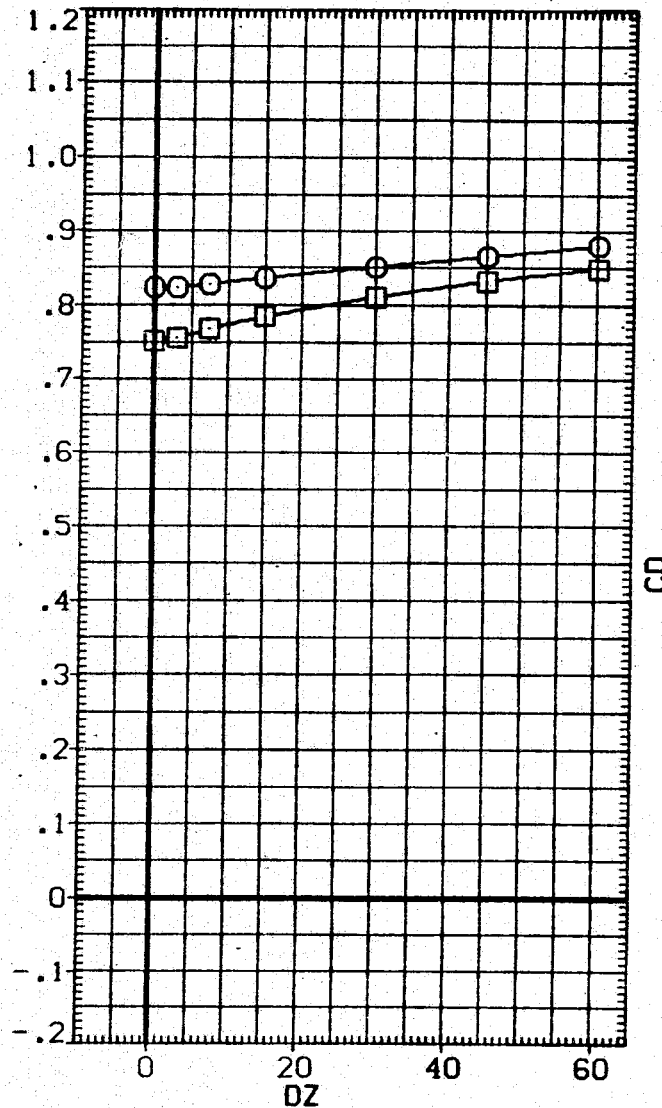
10.000

8.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1338.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

CL



CD

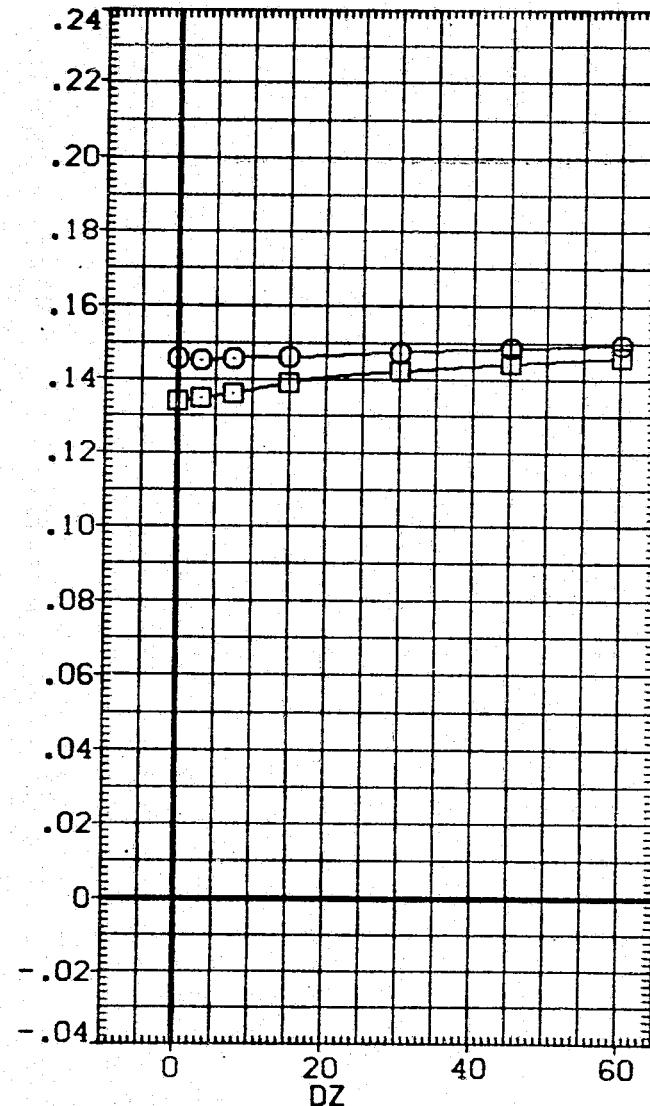


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

□
○

ALPHA0

10.000

ELV-1B

PARAMETRIC VALUES

.000

ELV-0B

3.000

14.000

ELEVON

5.000

MACH

.600

PHI

.000

BETA0

-5.000

BETAC

-5.000

DY

10.000

DX

10.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF 5500.0000

SQ.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

IN.YC

ZMRP 190.8000

IN.ZC

SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

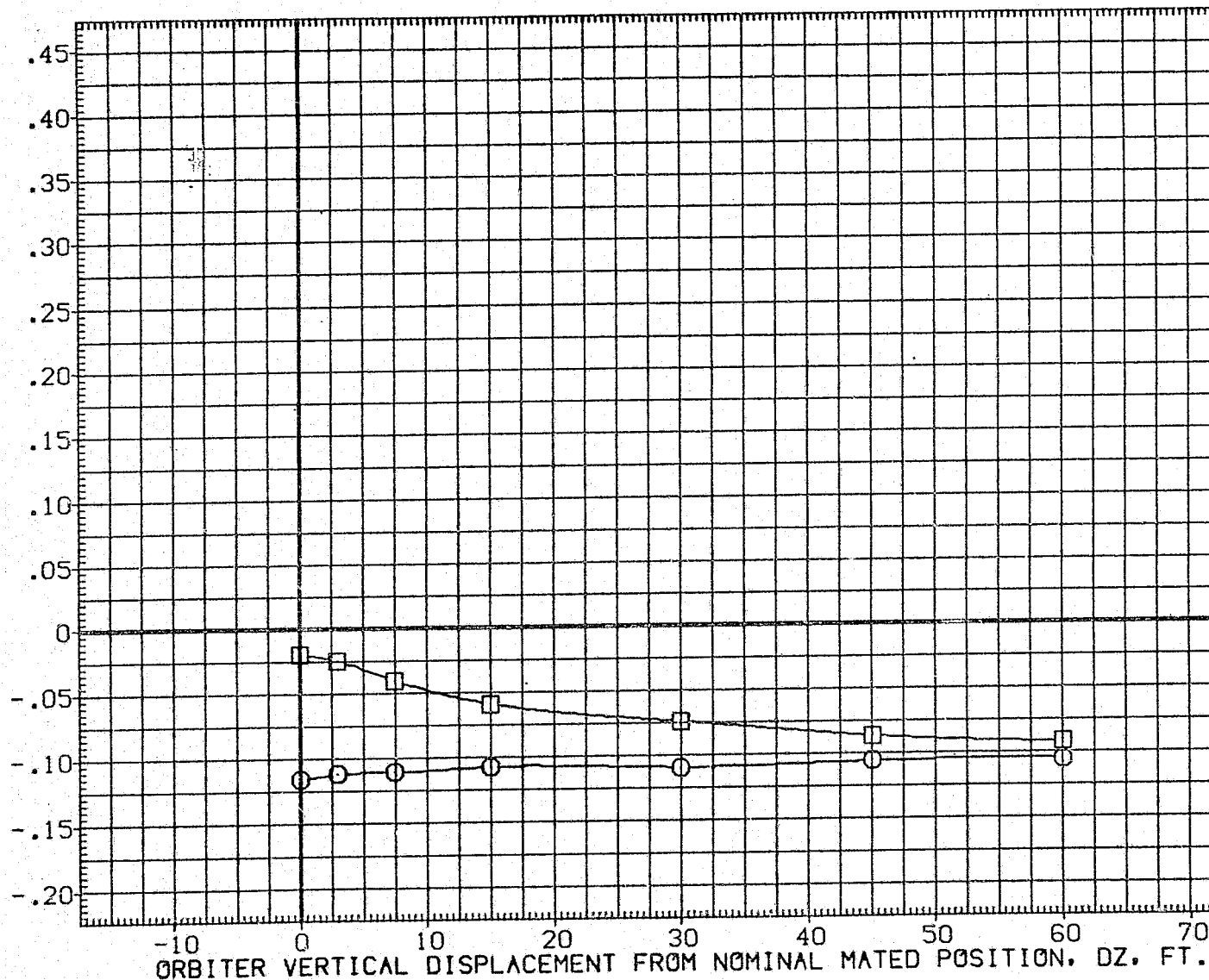


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-10	PARAMETRIC VALUES	ELV-08	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	-5.000	DY	10.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

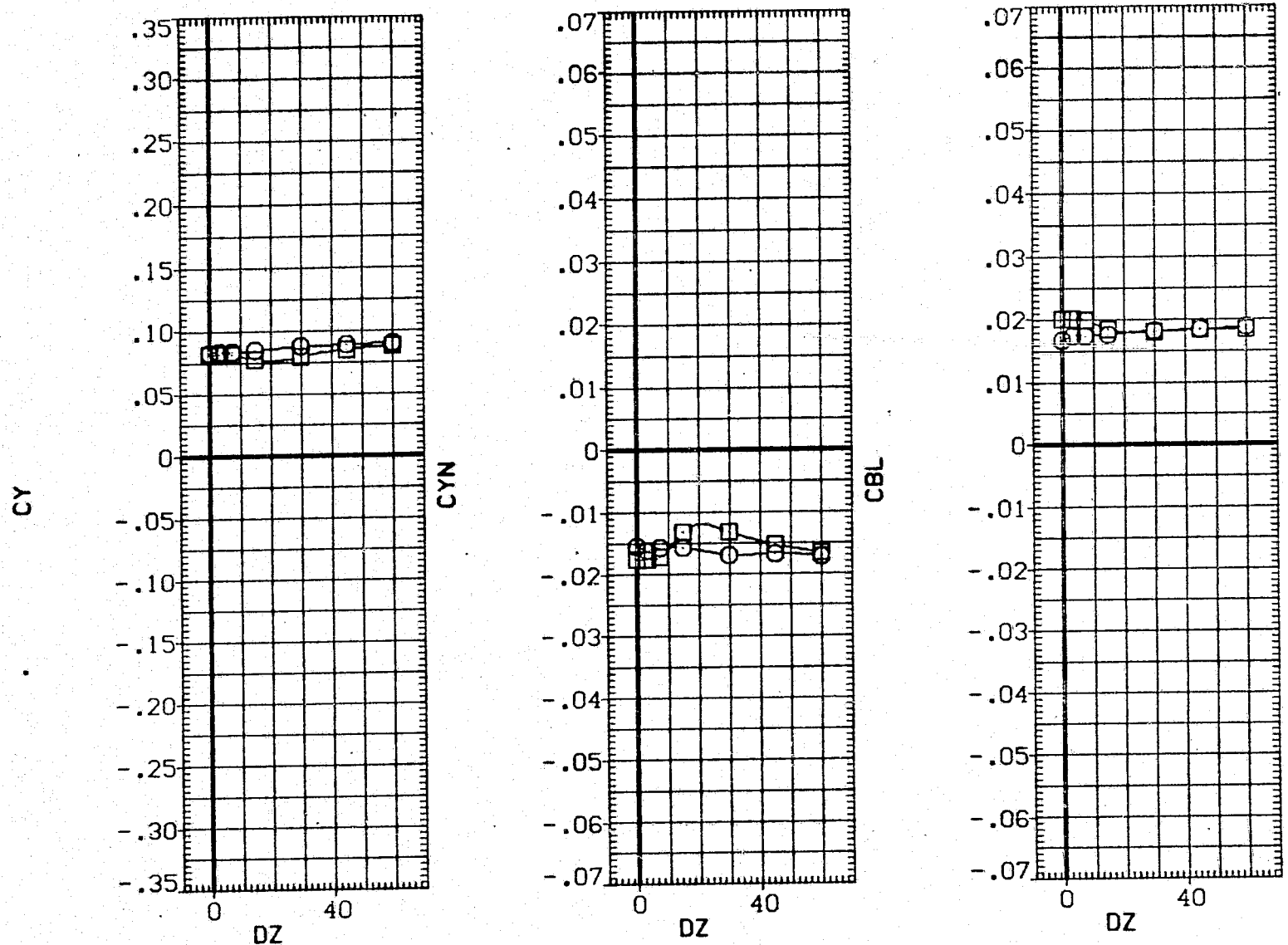


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	.600	
		PHI	.000	BETA0	-5.000
		BETAC	-5.000	DY	10.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

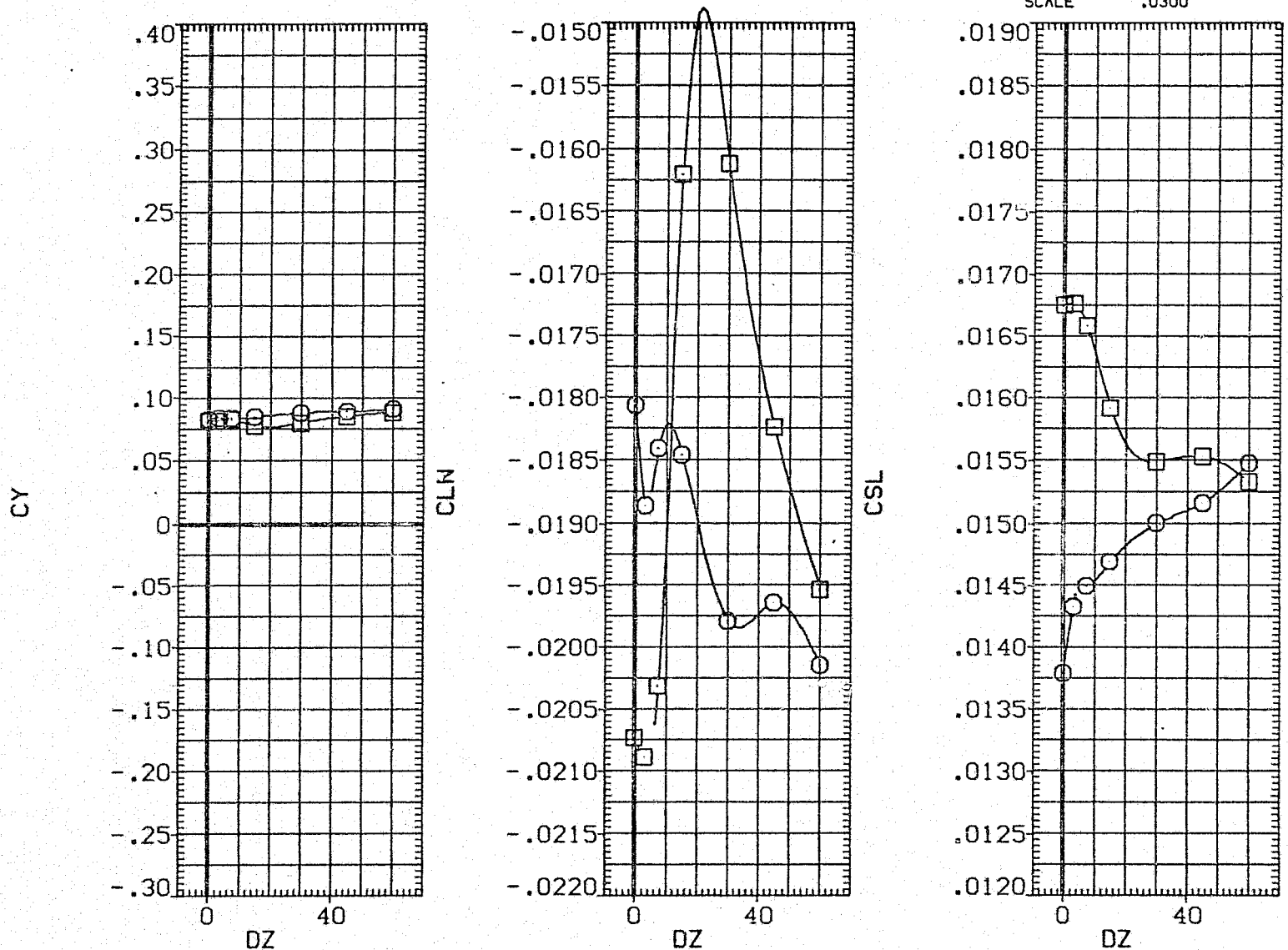


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	-5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	50 FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

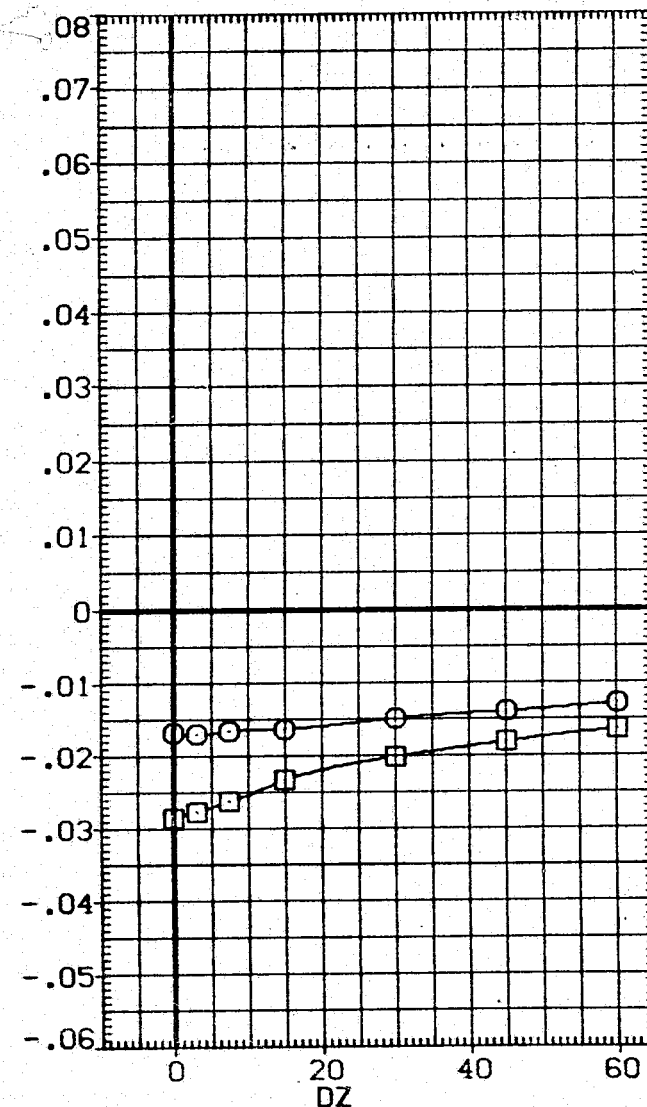
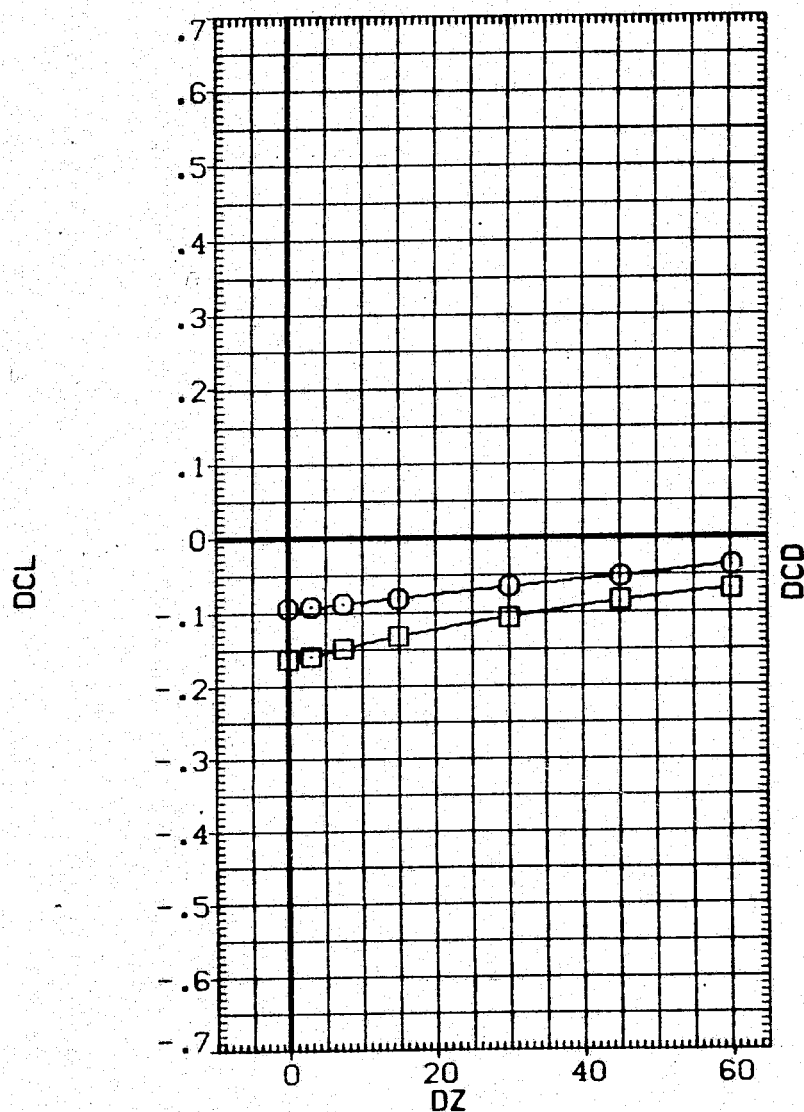


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

.000

10.000

BETAC

ELV-OB

MACH

DX

BETAC

-5.000

3.000

.600

10.000

-5.000

REFERENCE INFORMATION

SREF

LREF

BREF

XMRP

YMRP

SCALE

5500.0000

327.7800

2348.0400

1339.9000

.0000

190.8000

.0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

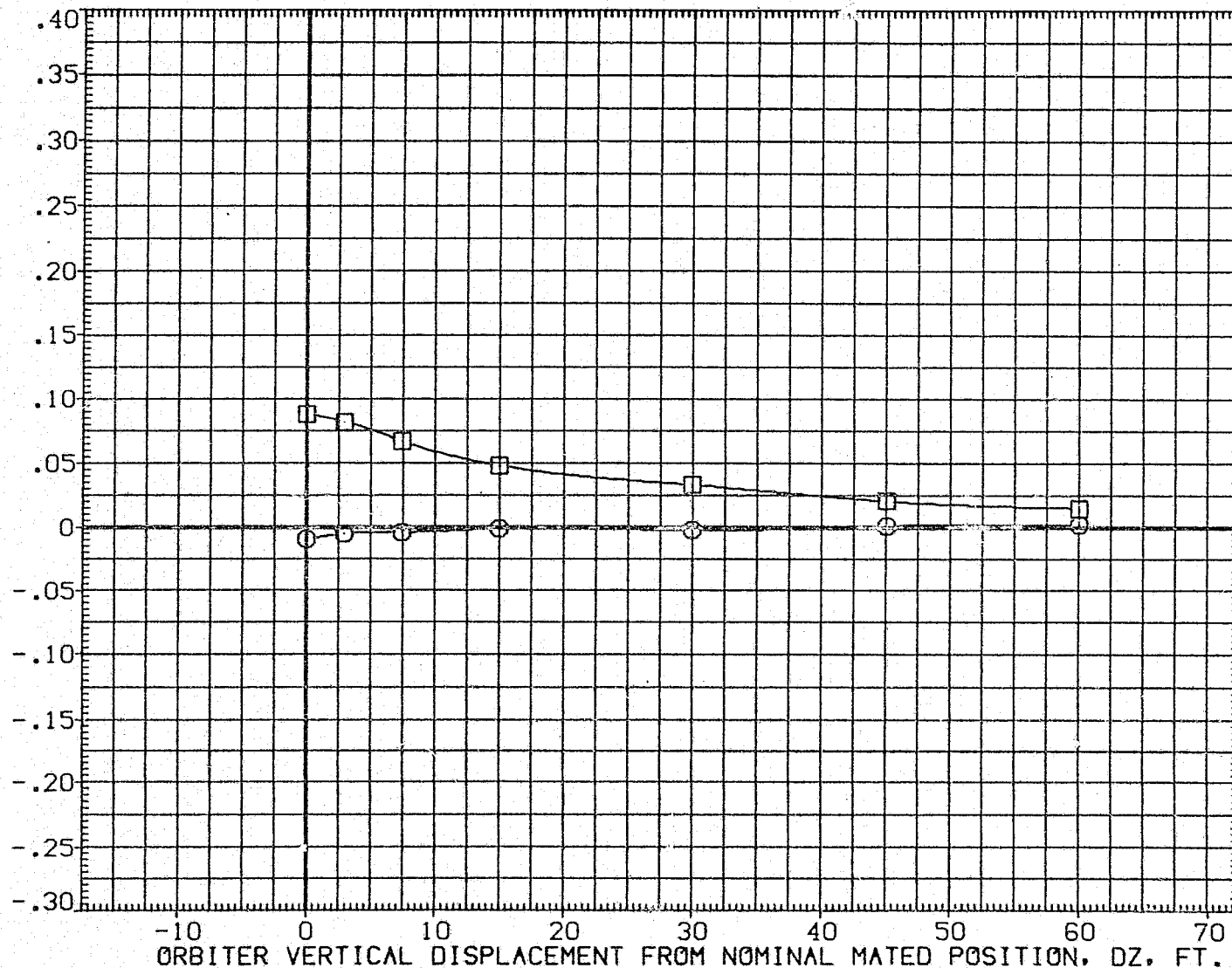


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHA0 8.000 BETAC -5.000
□	14.000	ELV-18 .000 ELV-08 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

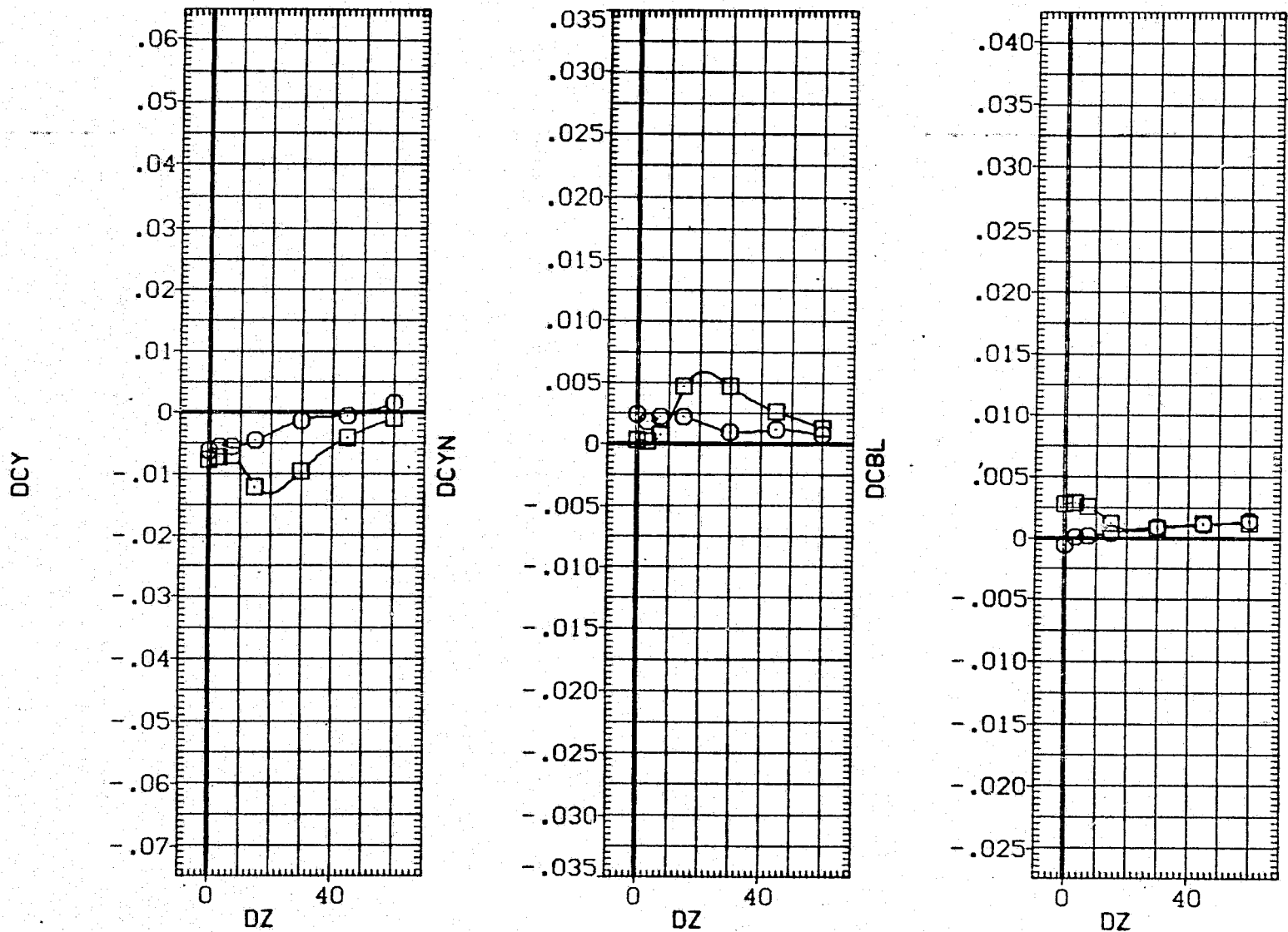


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC -5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

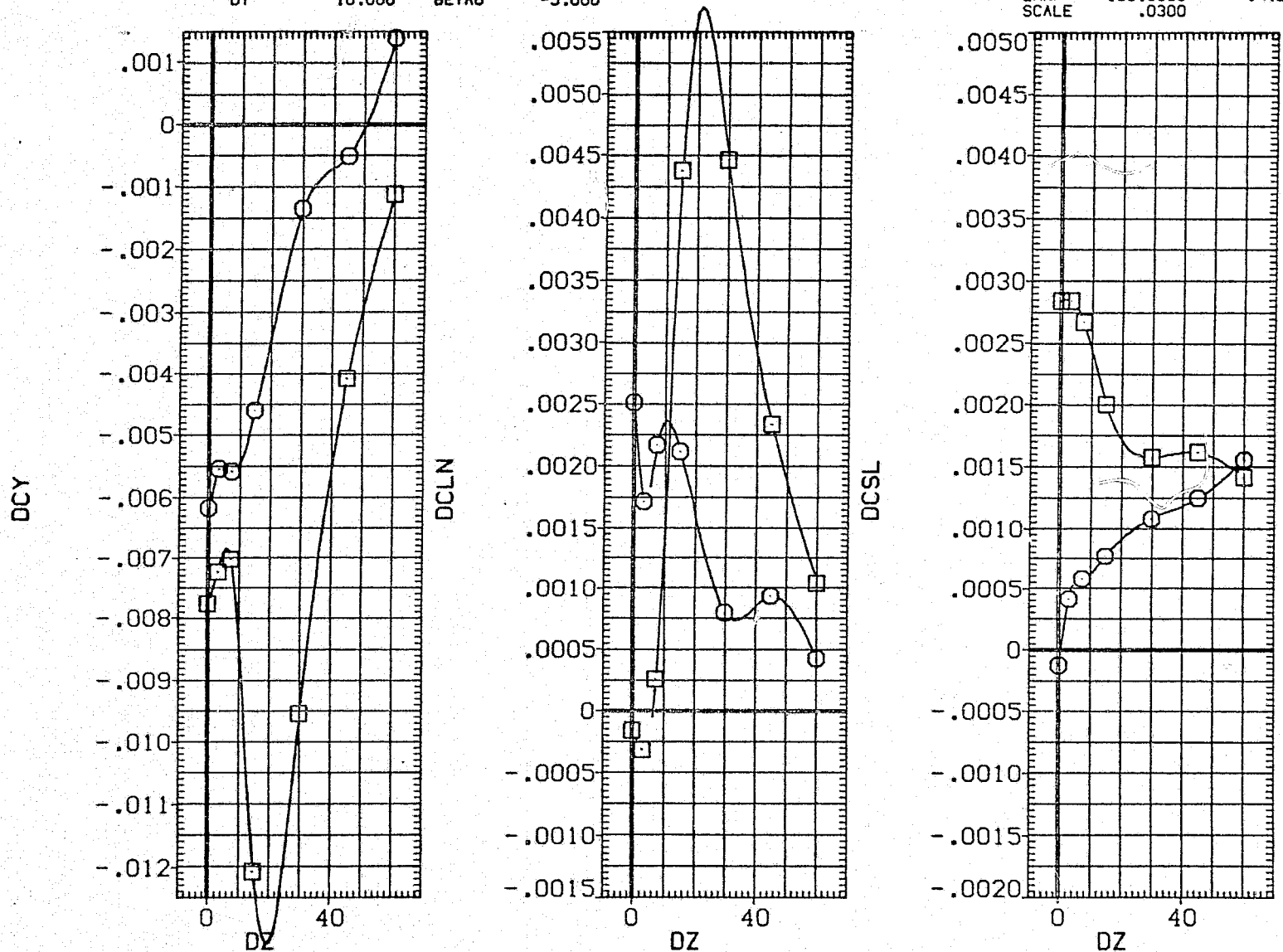


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEV0N	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

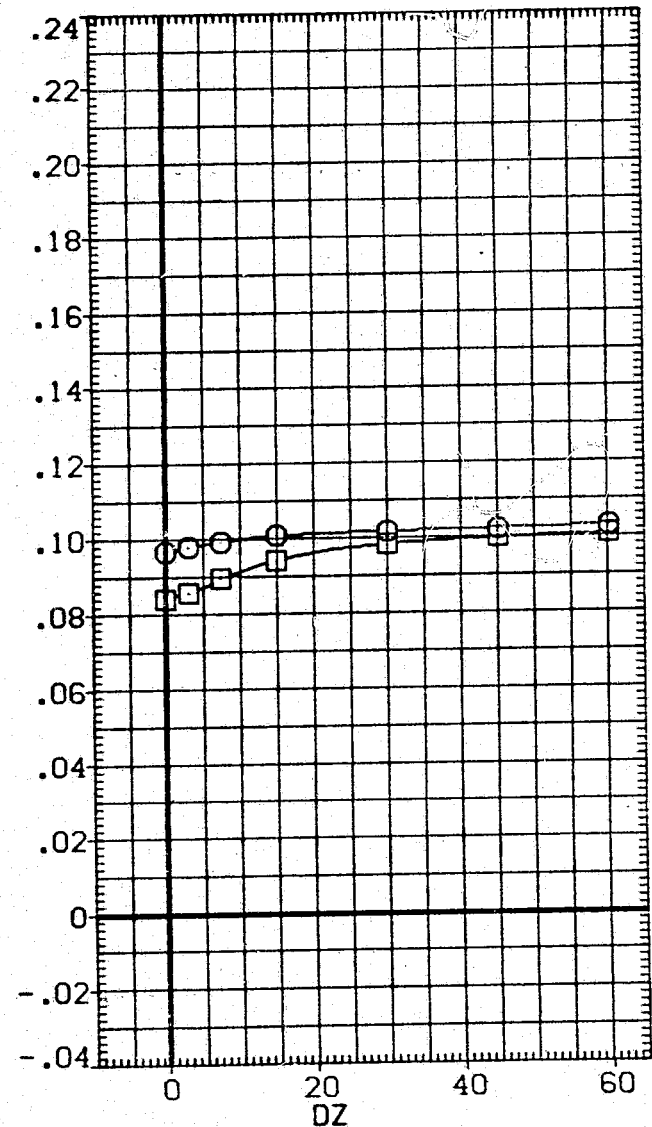
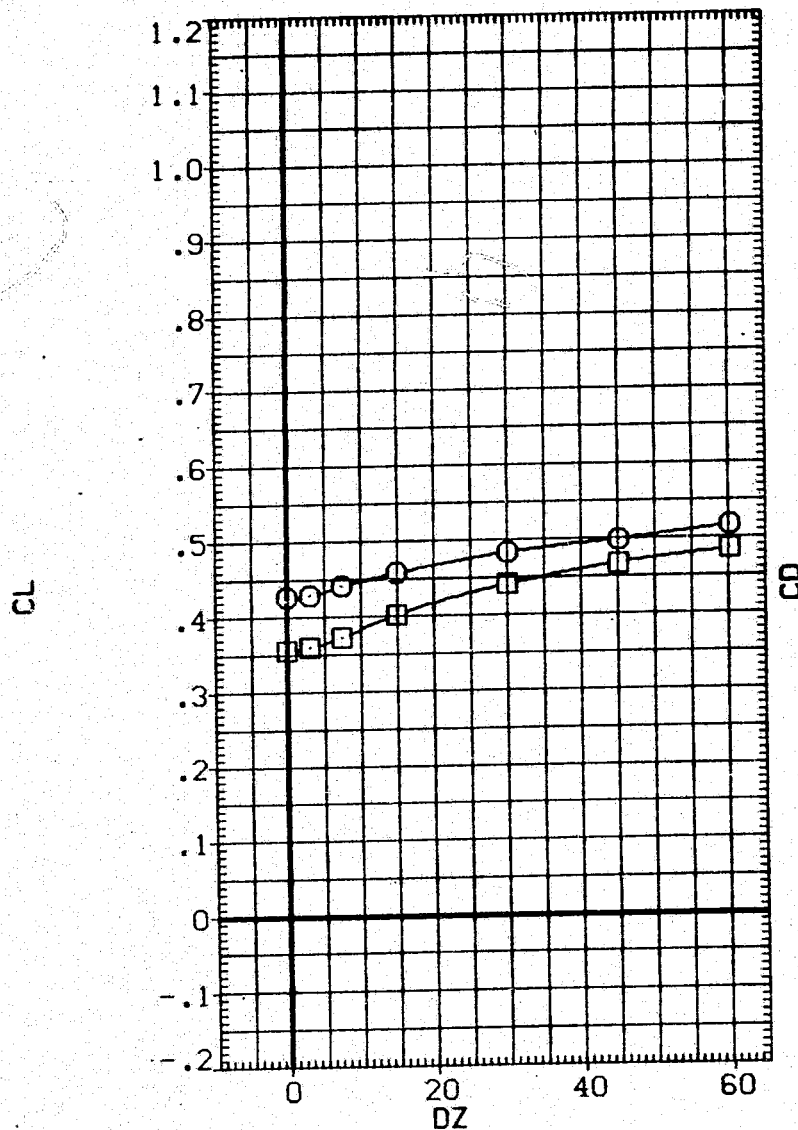


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□ALPHA0
10.000
14.000ELV-1B
ELEVON
PHI
BETAC
DX

PARAMETRIC VALUES

.000	ELV-0B	3.000
5.000	MACH	.600
.000	BETA0	-5.000
.000	DY	.000
10.000	ALPHAC	4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

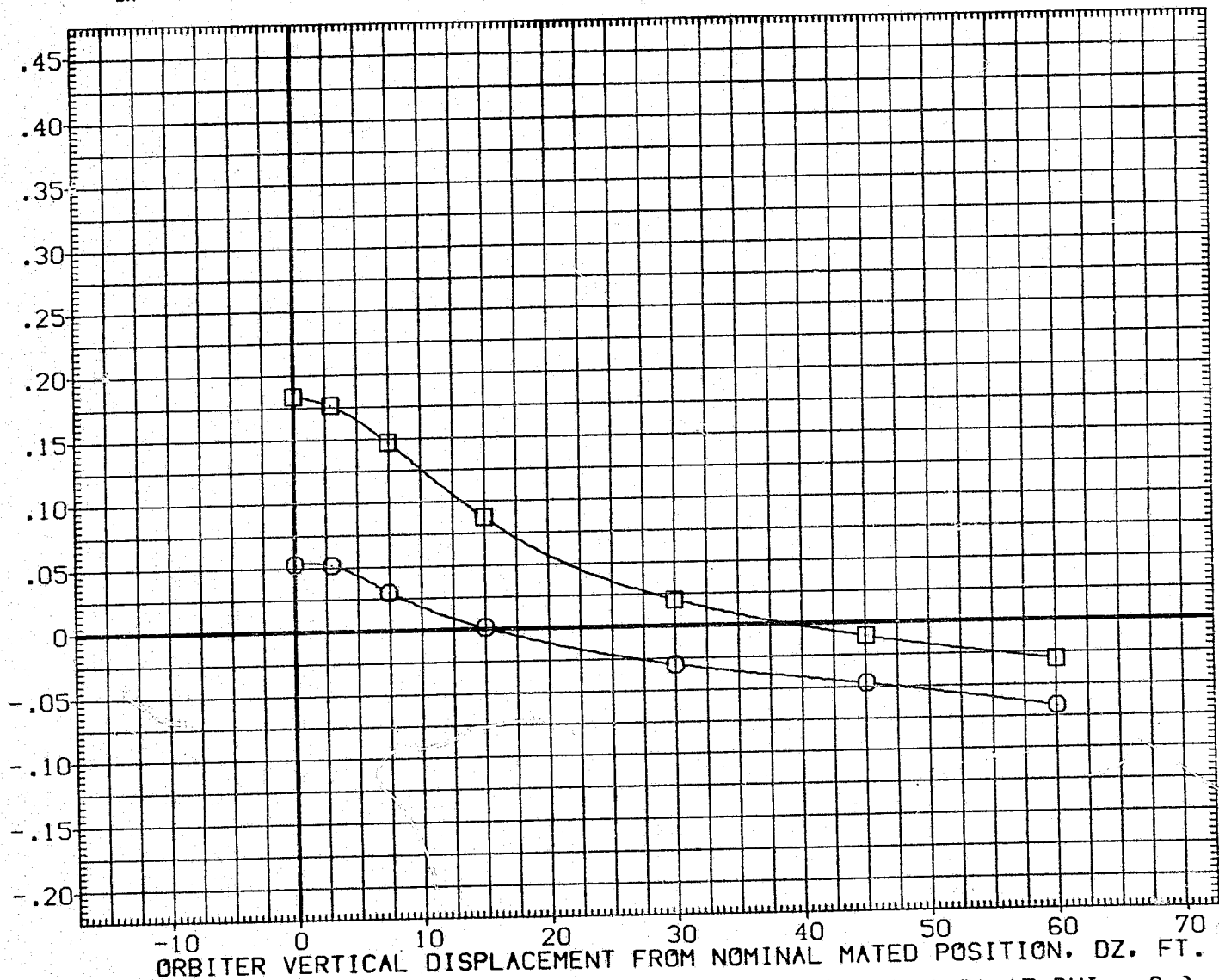


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	ELEVON	.000	3.000
□	14.000	PHI	5.000	.600
		BETAC	.000	-5.000
		DX	10.000	.000
		ALPHAC	4.000	

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

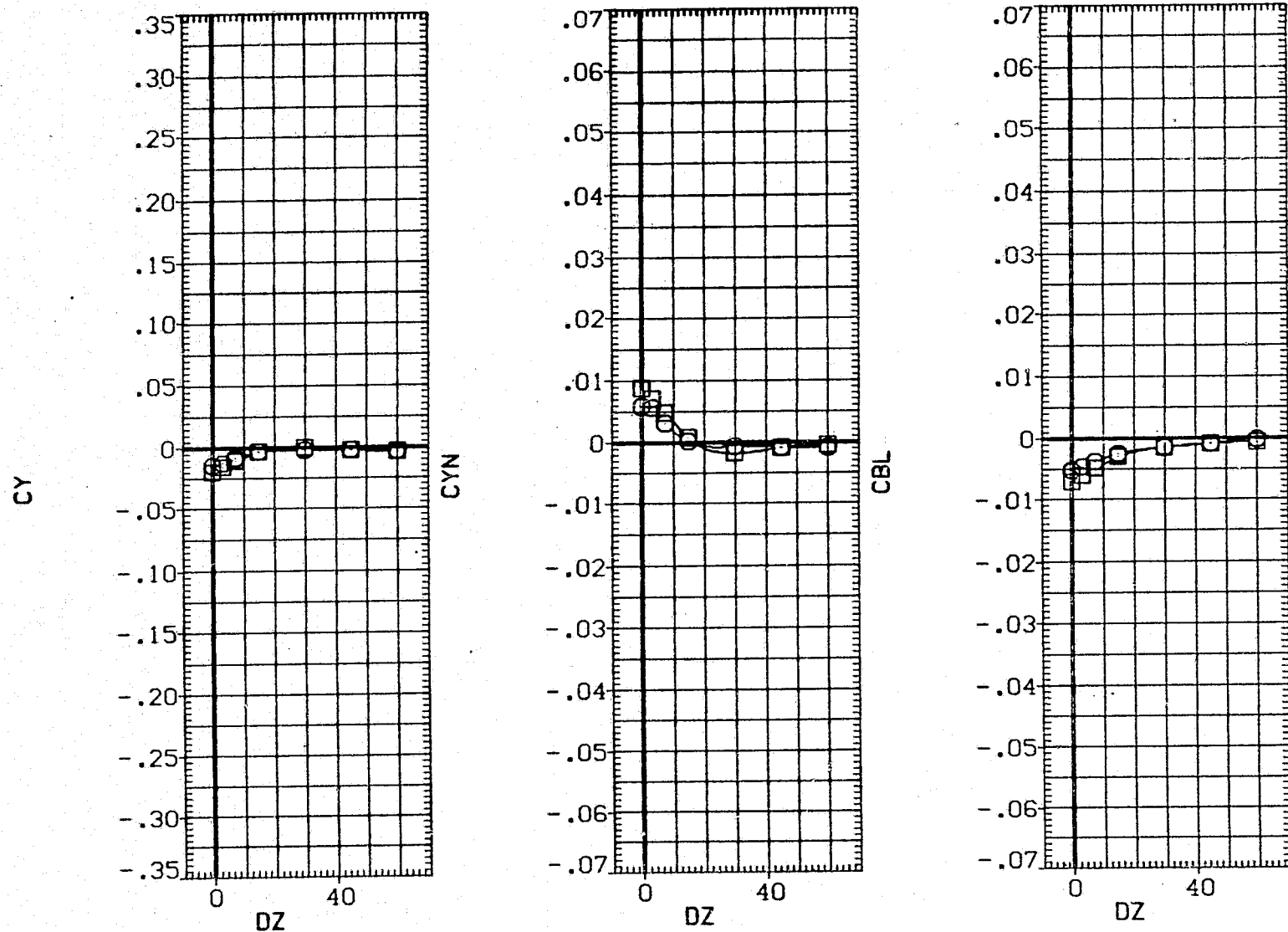


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB
○	10.000	.000	5.000	3.000
□	14.000	.000	.000	.600
		PHI	.000	BETA0
		BETAC	.000	DY
		DX	10.000	ALPHAC
				4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

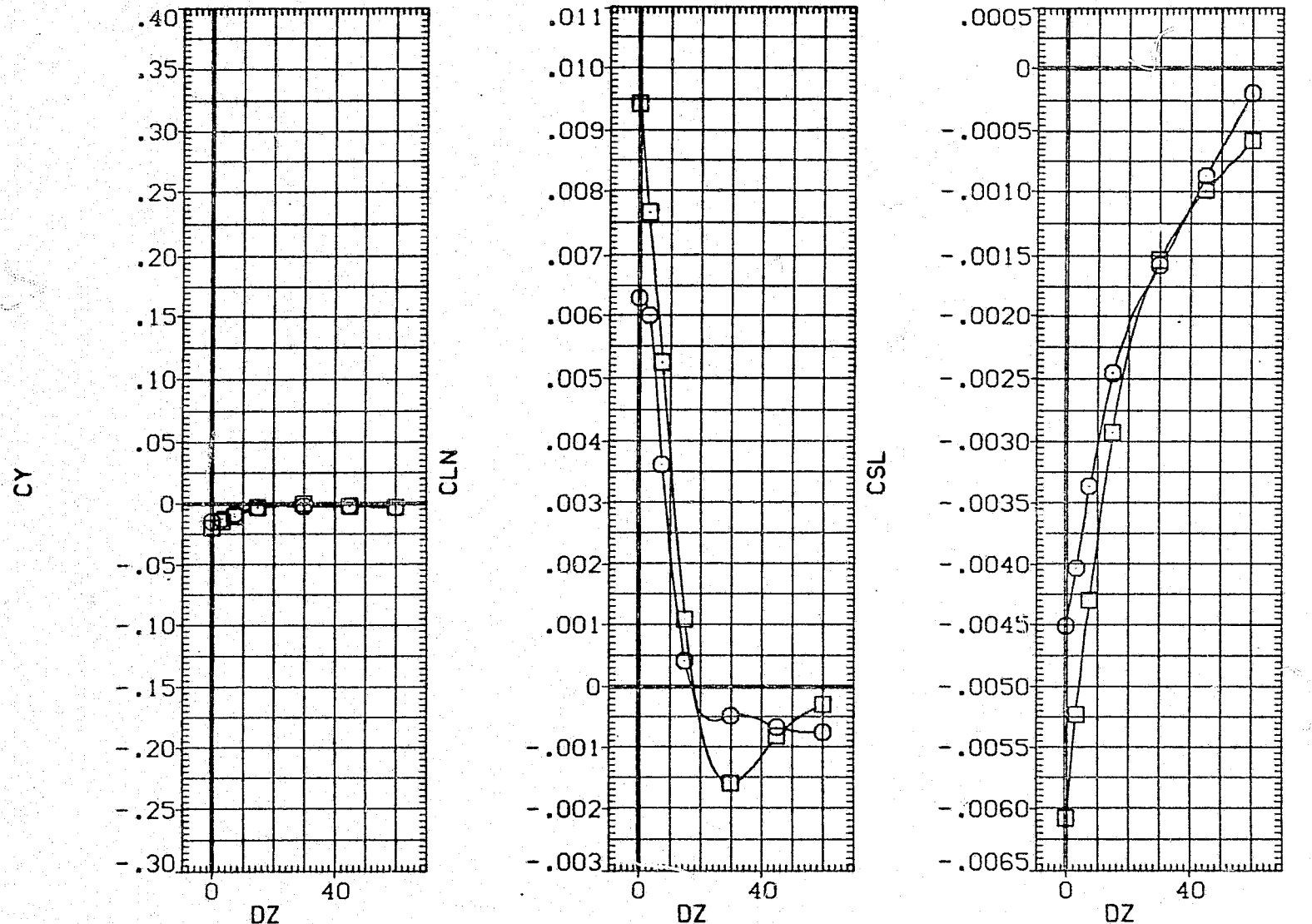


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES		
○	10.000	ALPHAC 4.000	BETAC .000	
□	14.000	ELV-1B .000	ELV-0B 3.000	
		ELEVON 5.000	MACH .600	
		PHI .000	DX 10.000	
		DY .000	BETA0 -5.000	

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

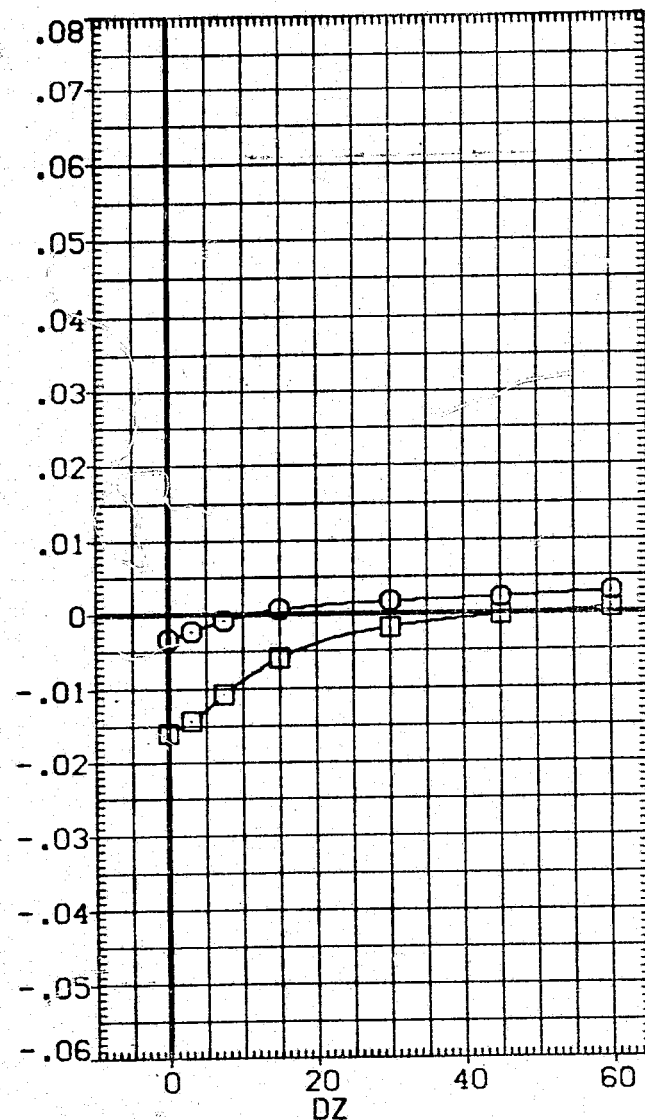
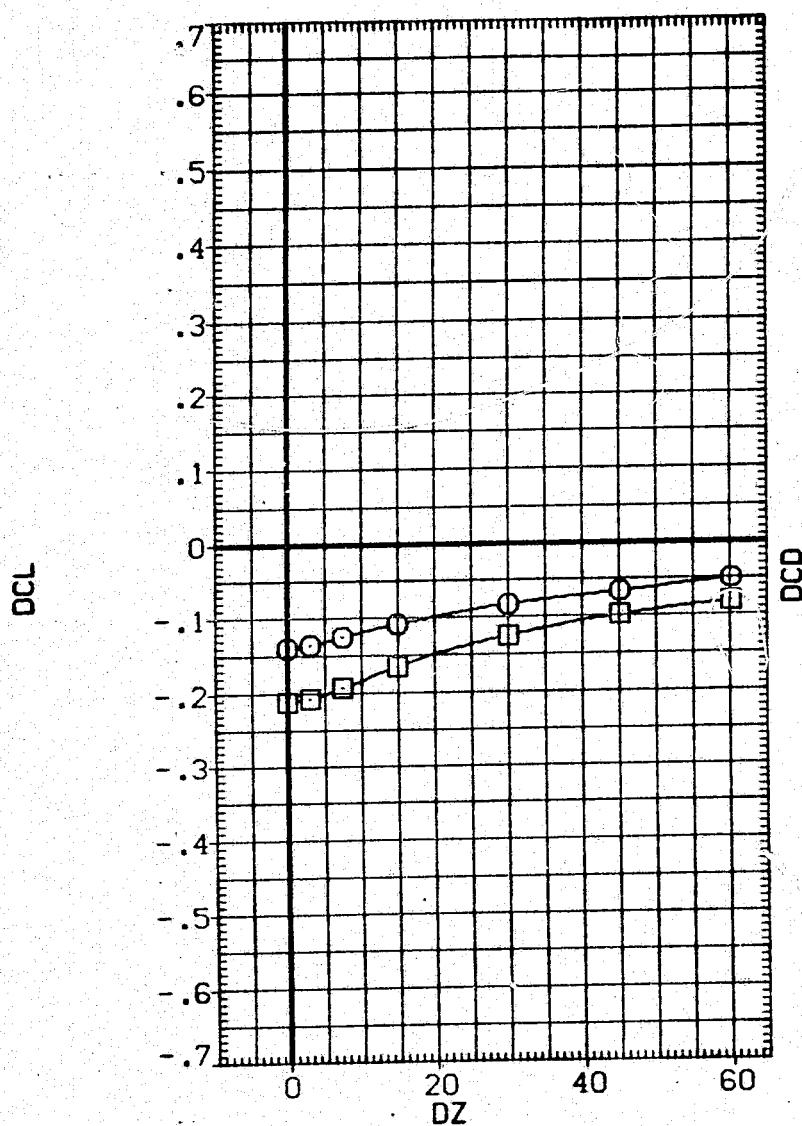


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHA0	4.000	BETAC	.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

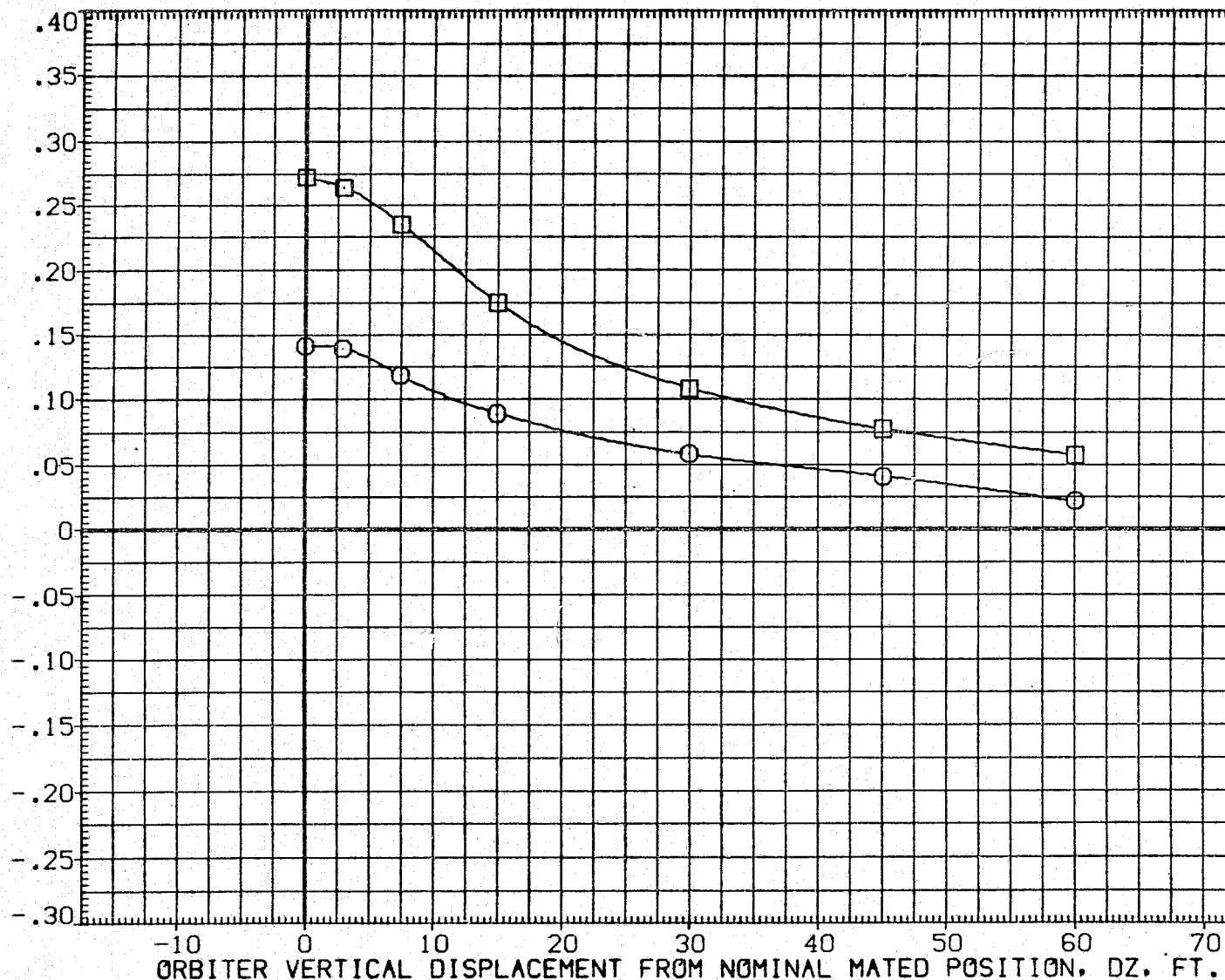


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	ALPHAC	4.000	.000
□	14.000	ELV-1B	.000	ELV-0B 3.000
		ELEVON	5.000	MACH .600
		PHI	.000	DX 10.000
		DY	.000	BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

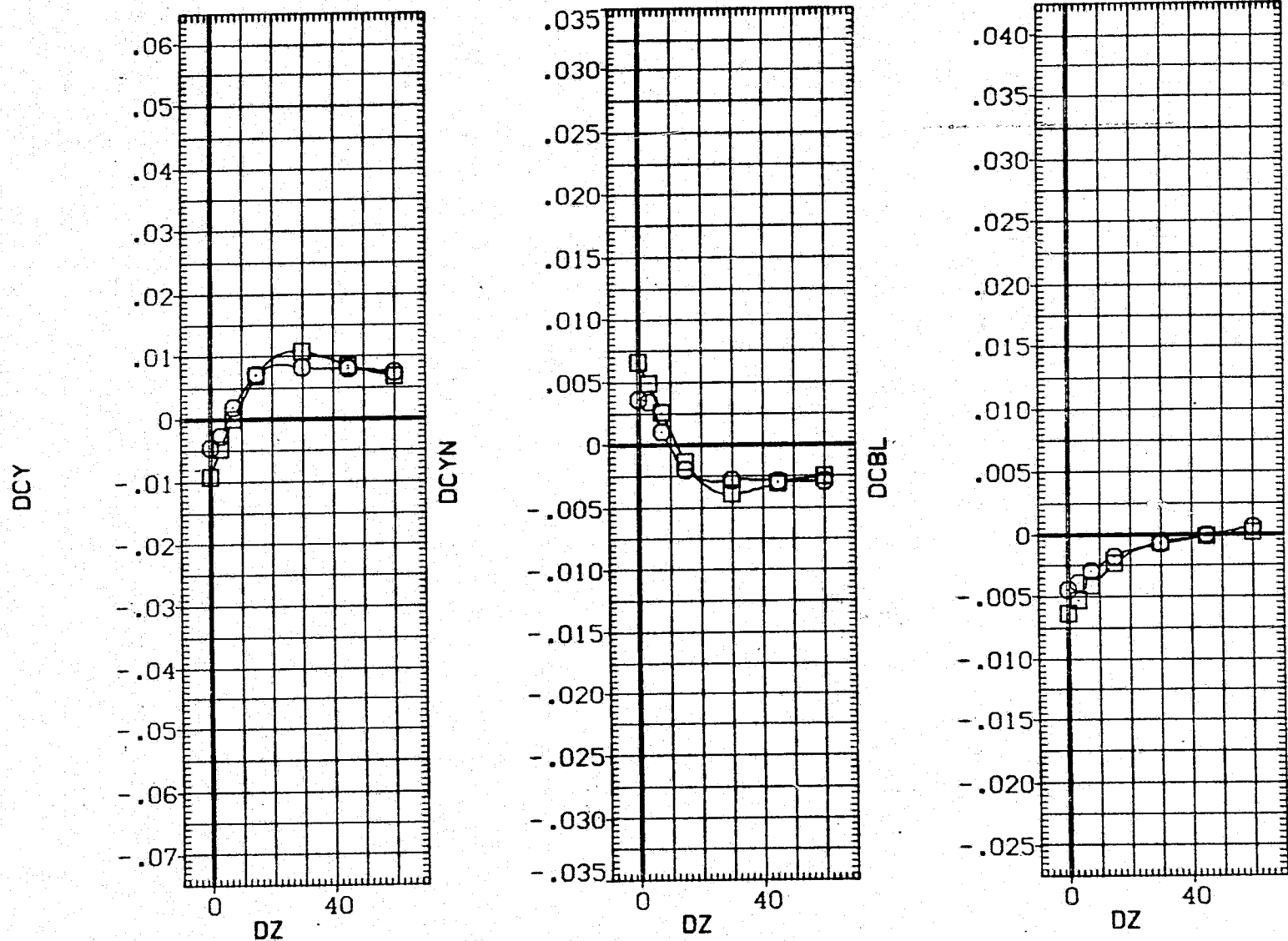


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
YMRP	1339.9000	IN.XC
ZMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

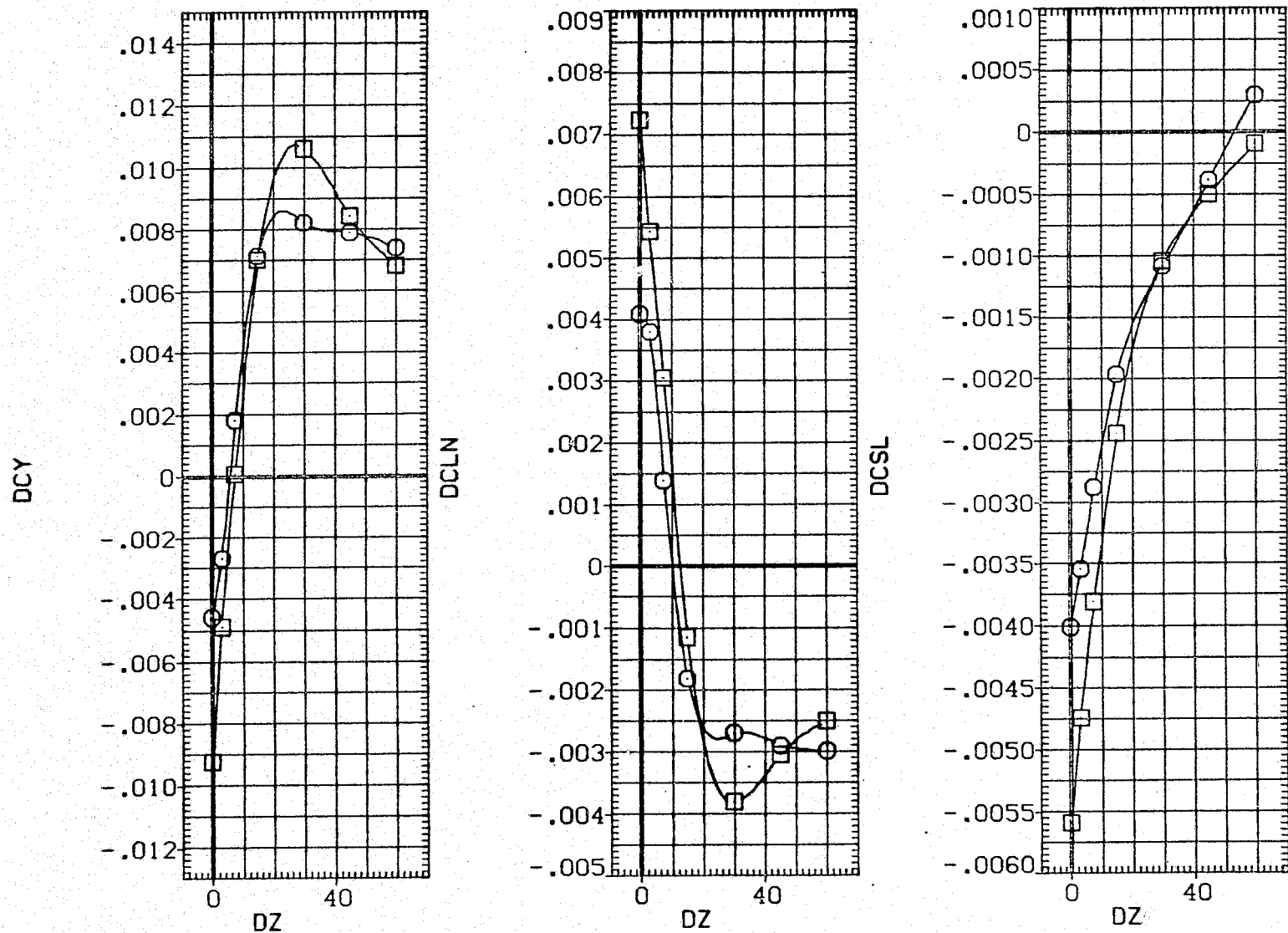


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN110)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	.000	DY	.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

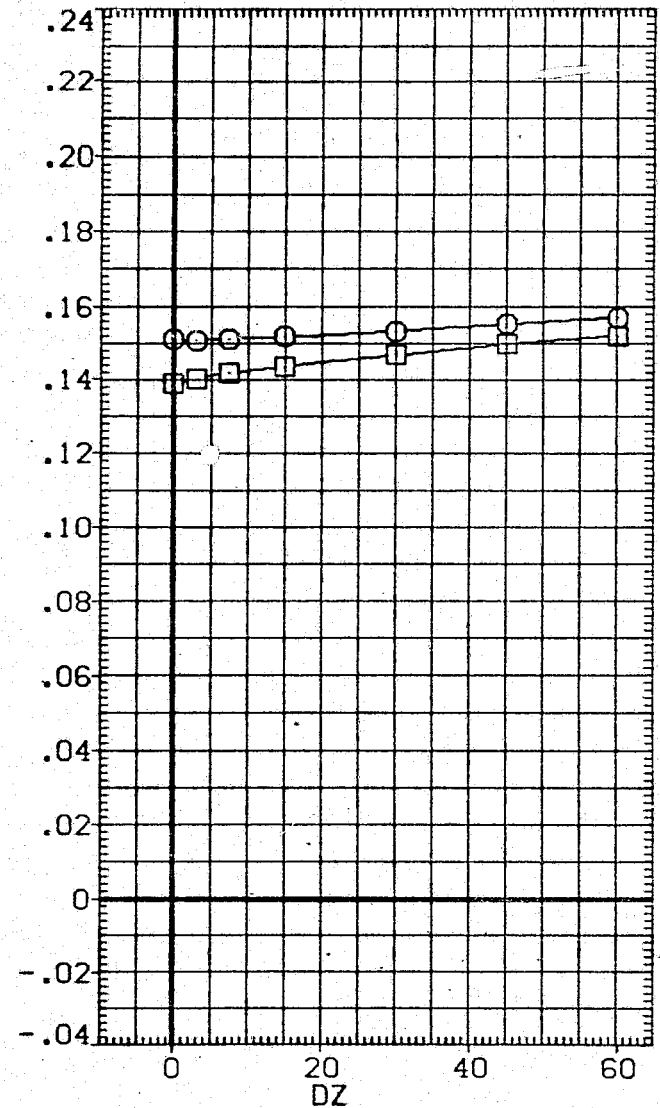
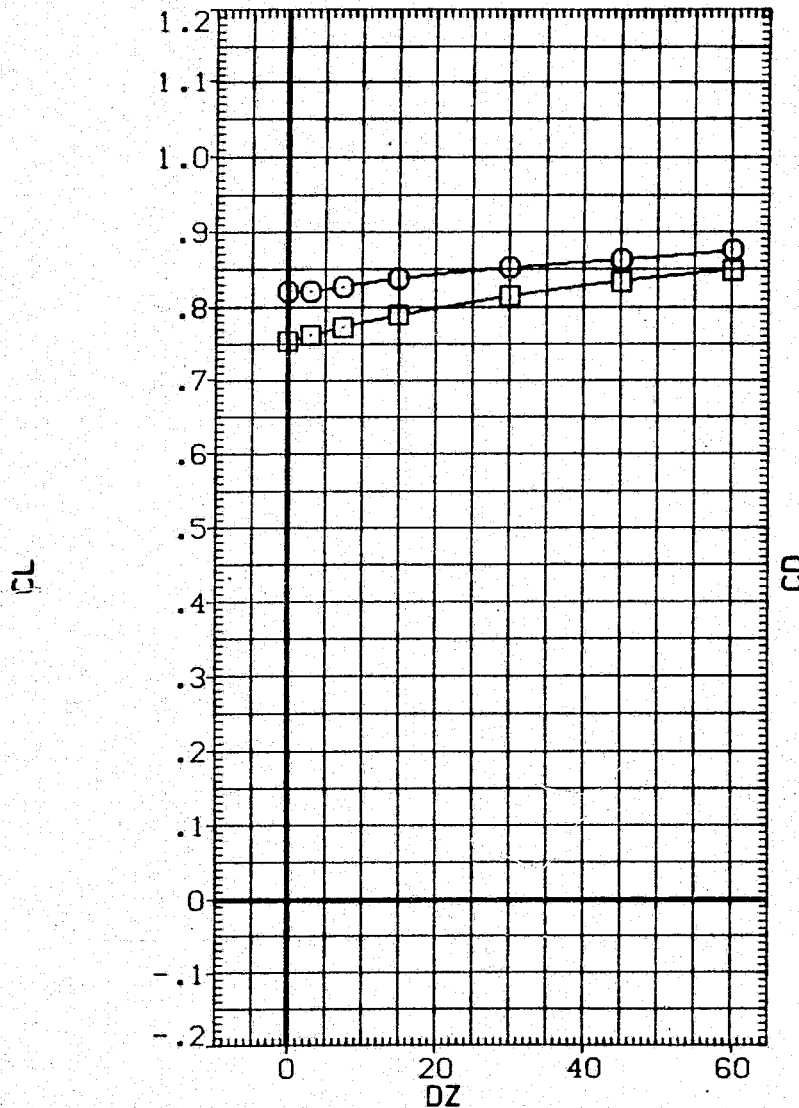


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	.000	DY	.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

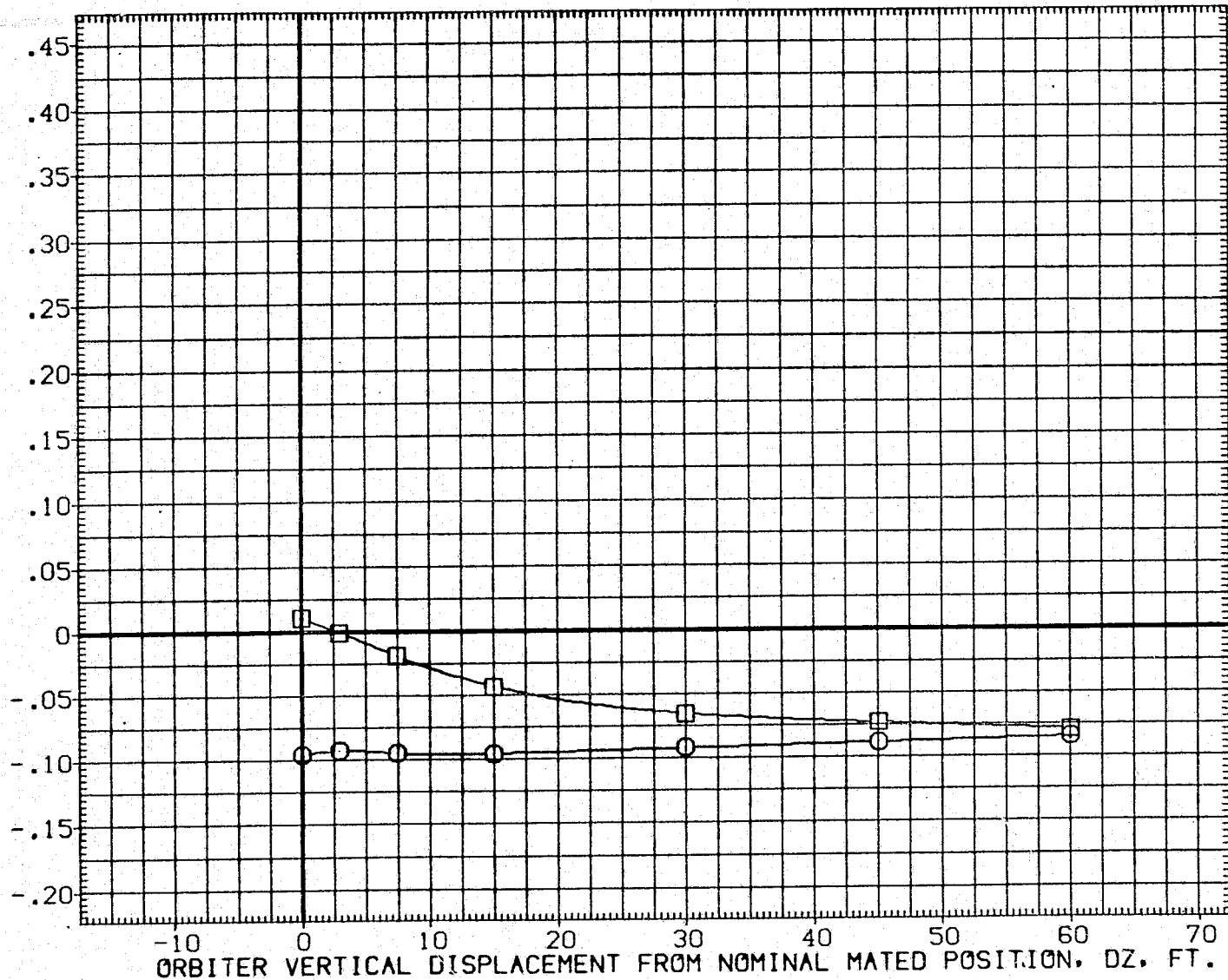


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN110)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB
○	10.000	.000	ELV-OB	3.000
□	14.000	5.000	MACH	.600
		.000	BETA0	-5.000
		.000	DY	.000
		10.000	ALPHAC	8.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN.
XMRP	1339.9000 IN.XC
YMRP	.0000 IN.YC
ZMRP	190.8000 IN.ZC
SCALE	.0300

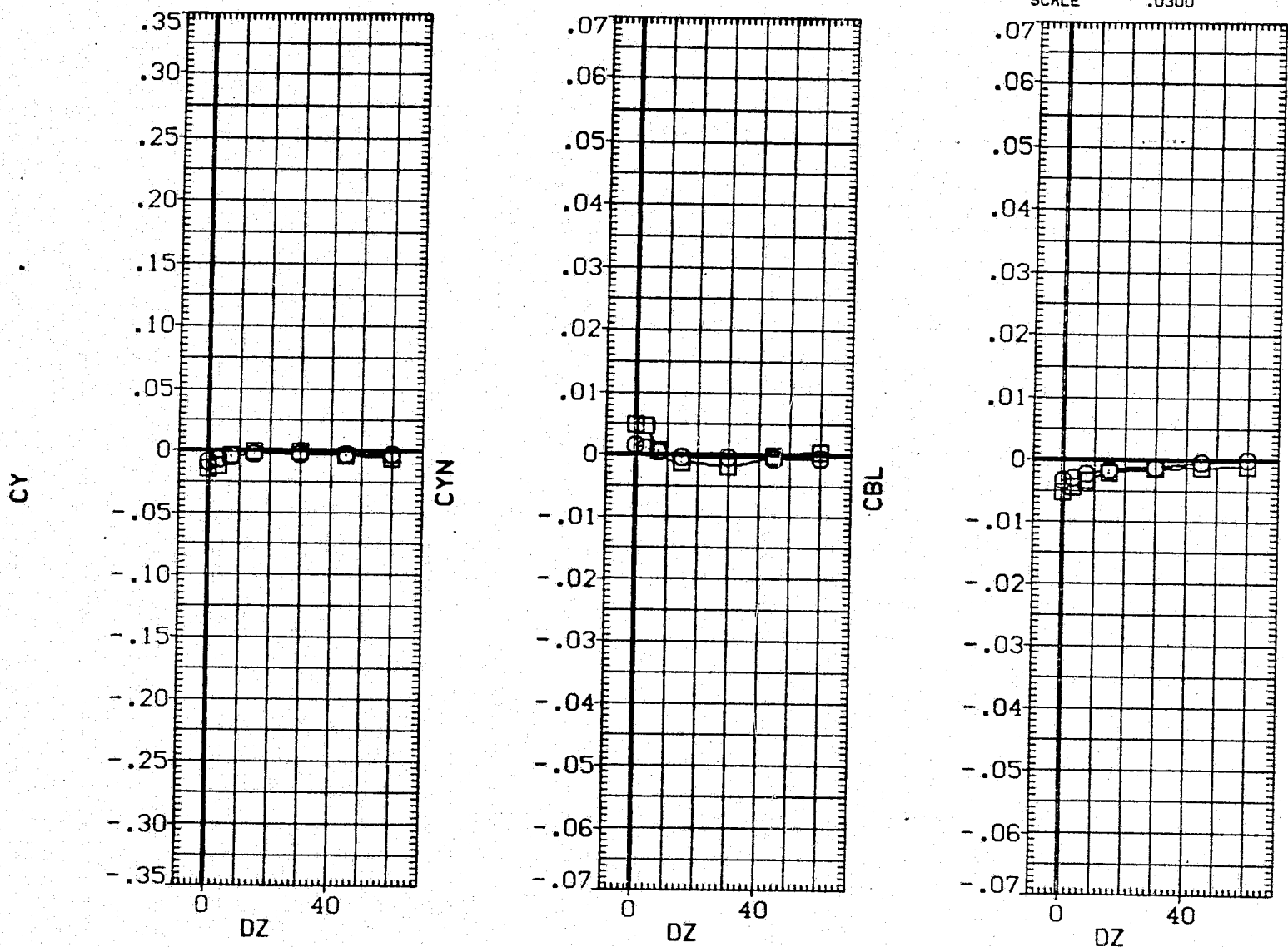


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	.000	DY	.000
		DX	10.000	ALPHAC	0.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

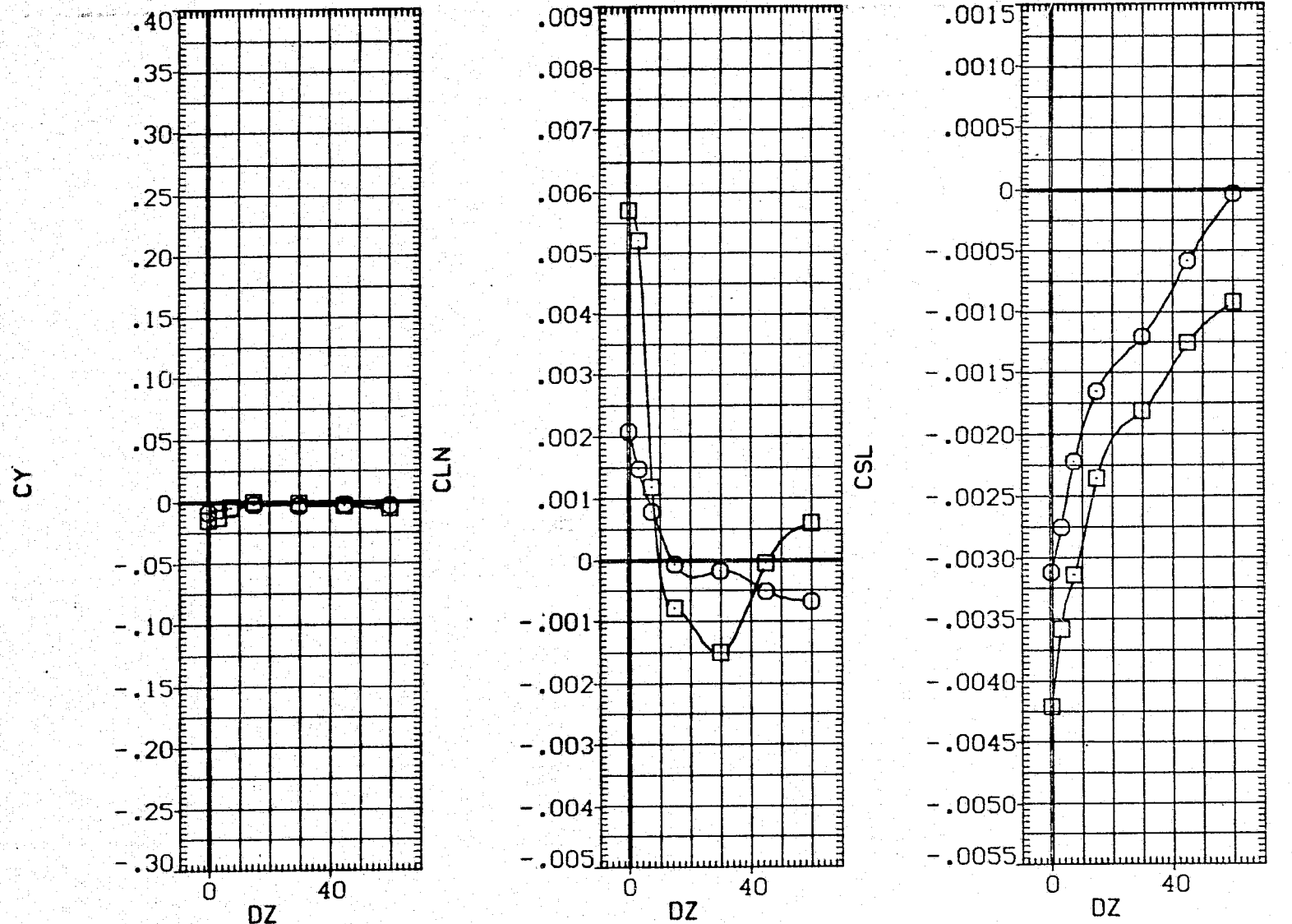


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 (747/1 01 S1) - (747/1)

D/S (110 - 035)(UGN110)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

.000

.000

BETAC

ELV-0B

MACH

DX

BETA0

.000

3.000

.600

10.000

-5.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

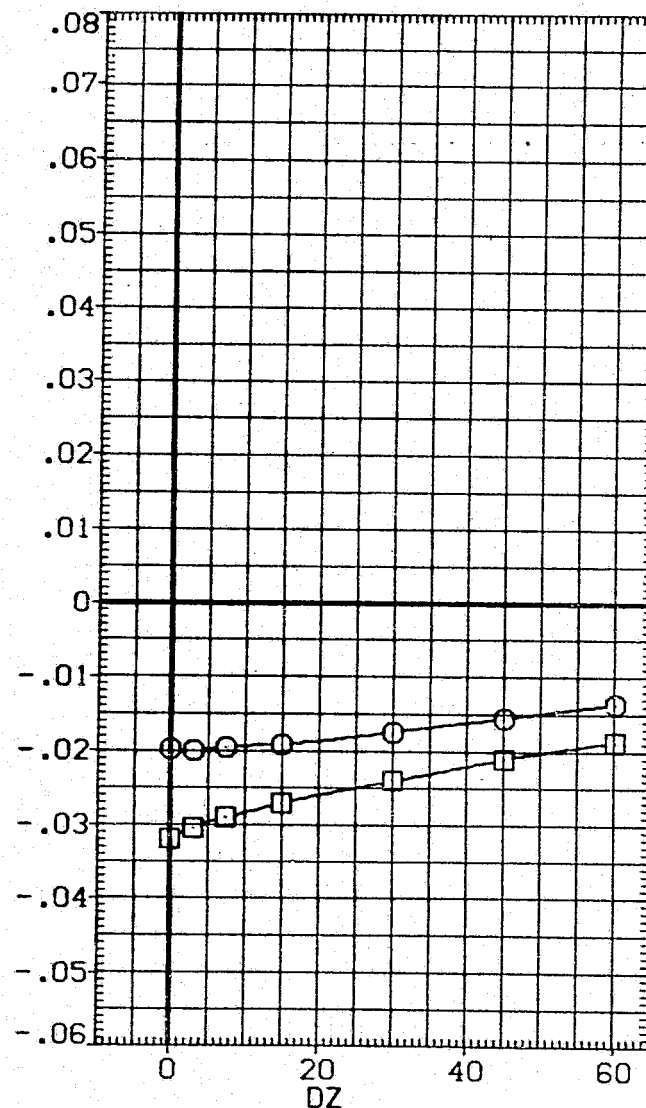
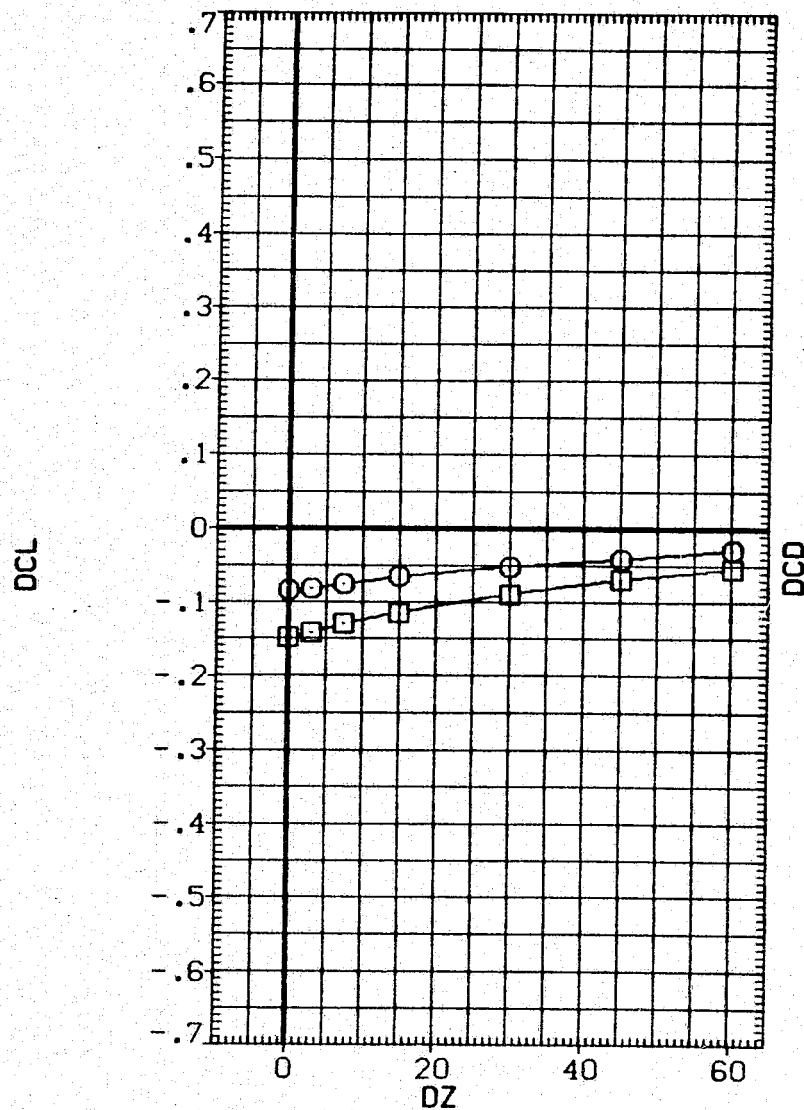


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES				REFERENCE INFORMATION		
○	10.000	ALPHAC	8.000	BETAC	.000	SREF	5500.0000	SQ.FT.
□	14.000	ELV-IB	.000	ELV-OB	3.000	LREF	327.7800	IN.
		ELEVON	5.000	MACH	.600	BREF	2348.0400	IN.
		PHI	.000	DX	10.000	XMRP	1339.9000	IN.XC
		DY	.000	BETA0	-5.000	YMRP	.0000	IN.YC
						ZMRP	190.8000	IN.ZC
						SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

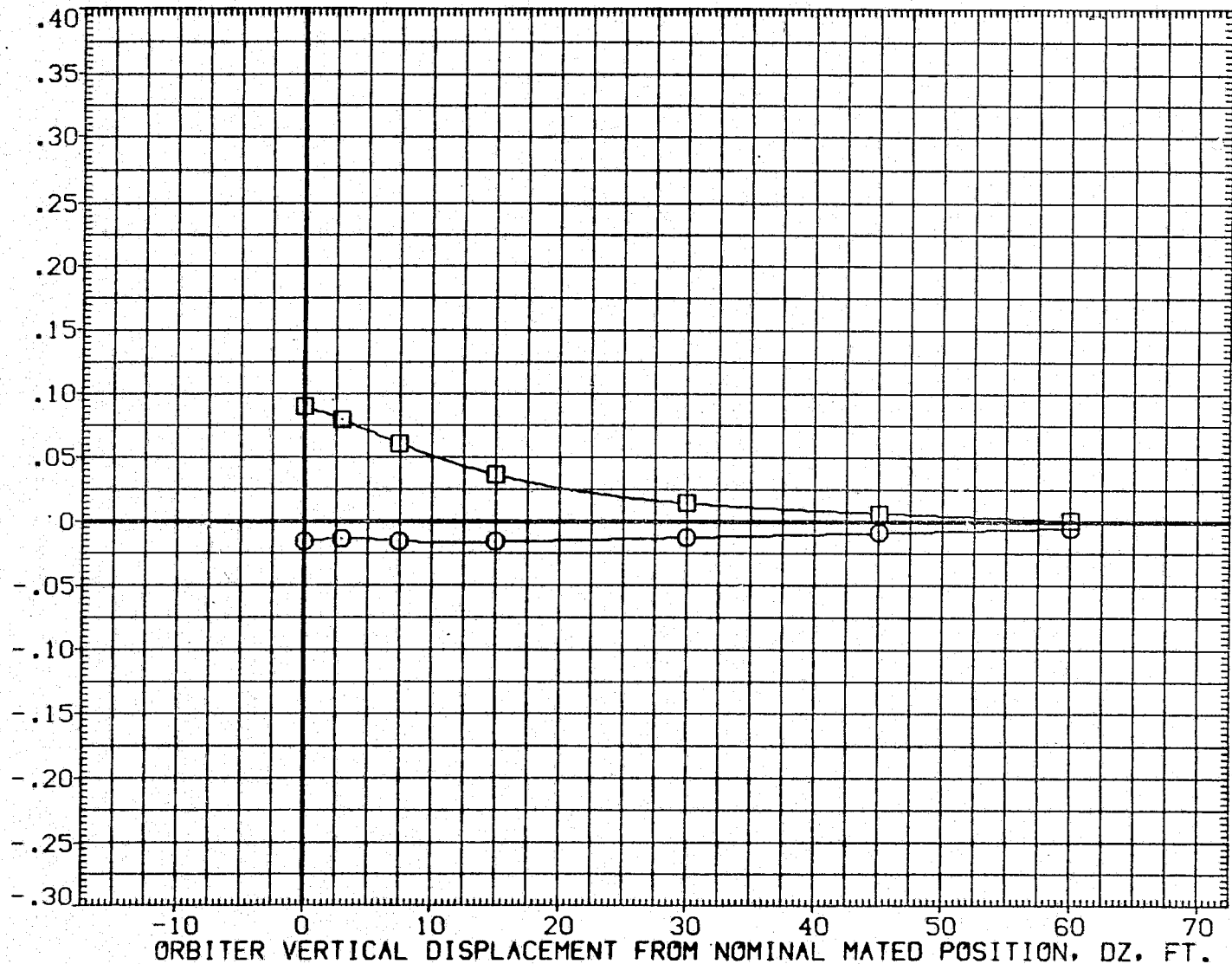


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	ELV-1B	8.000	.000
□	14.000	ELEVON	.000	ELV-0B 3.000
		PHI	5.000	MACH .600
		DY	.000	DX 10.000
			.000	BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

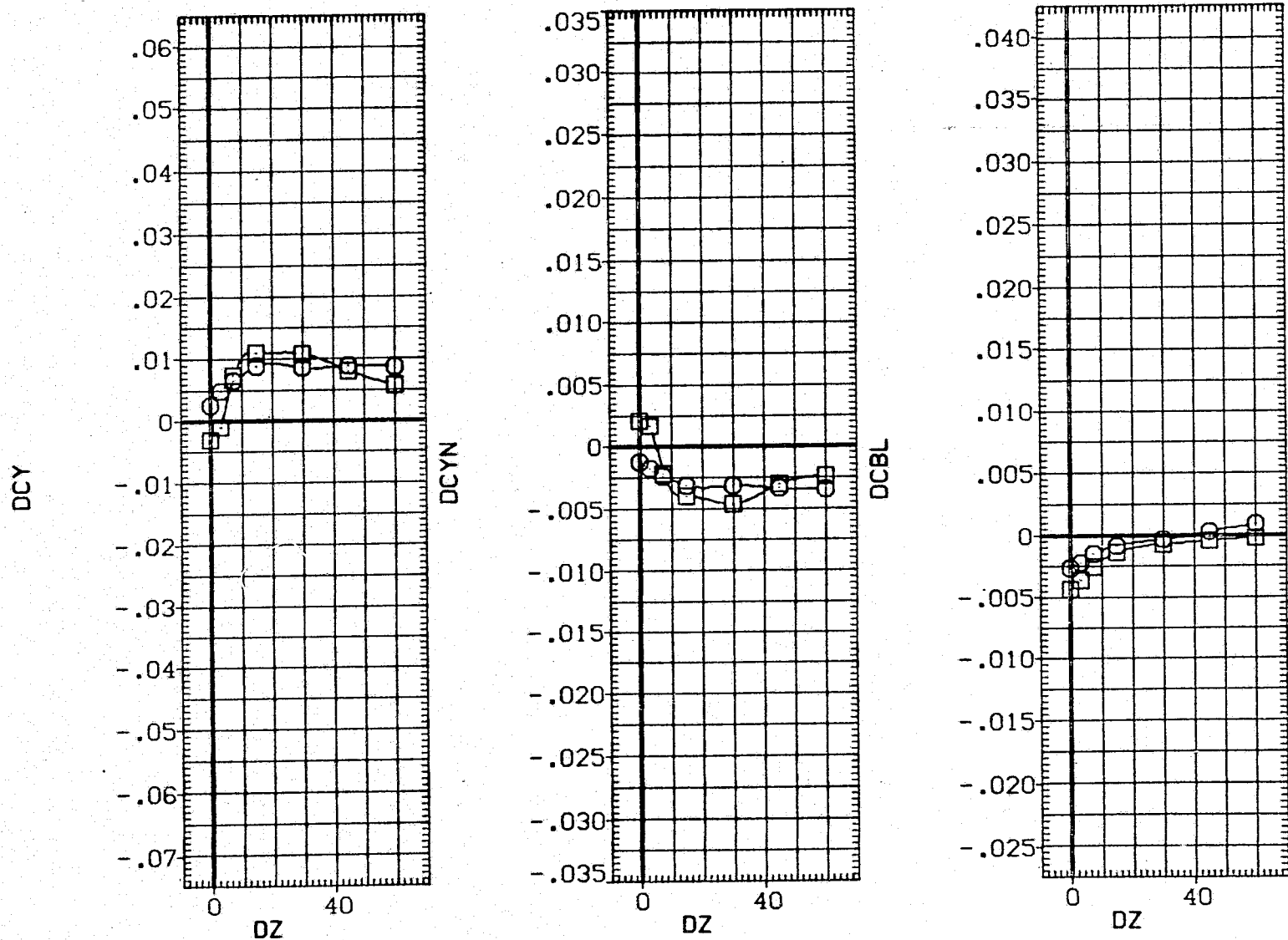


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC .000
□	14.000	ELV-18 .000 ELV-08 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY .000 BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

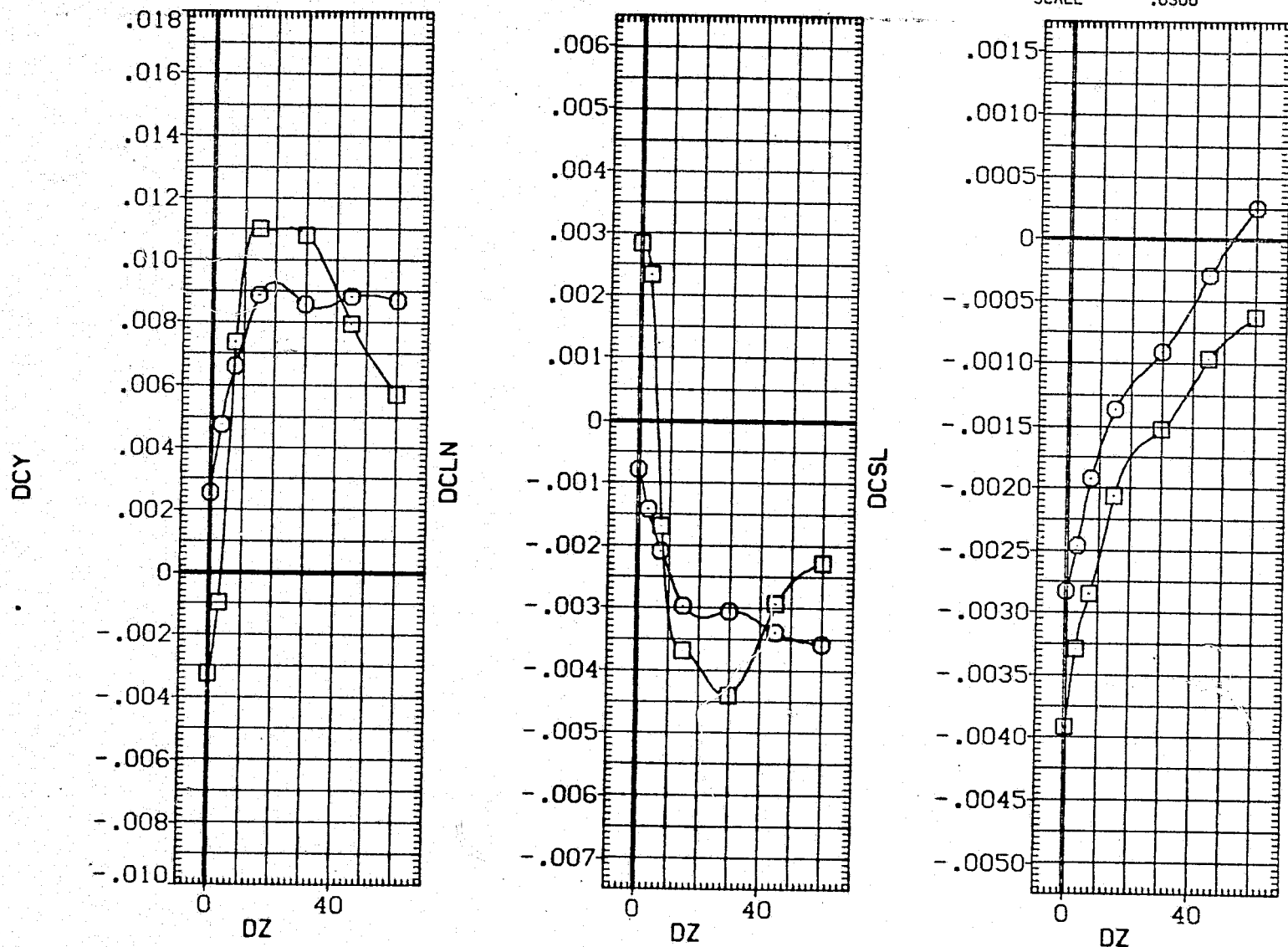


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN111)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

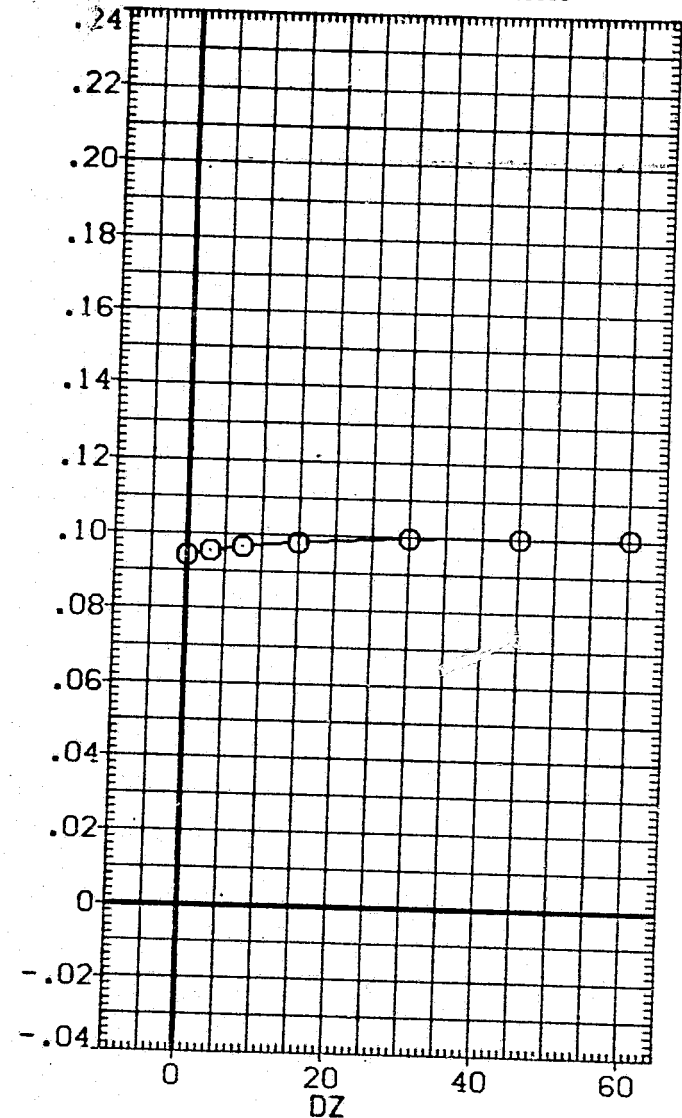
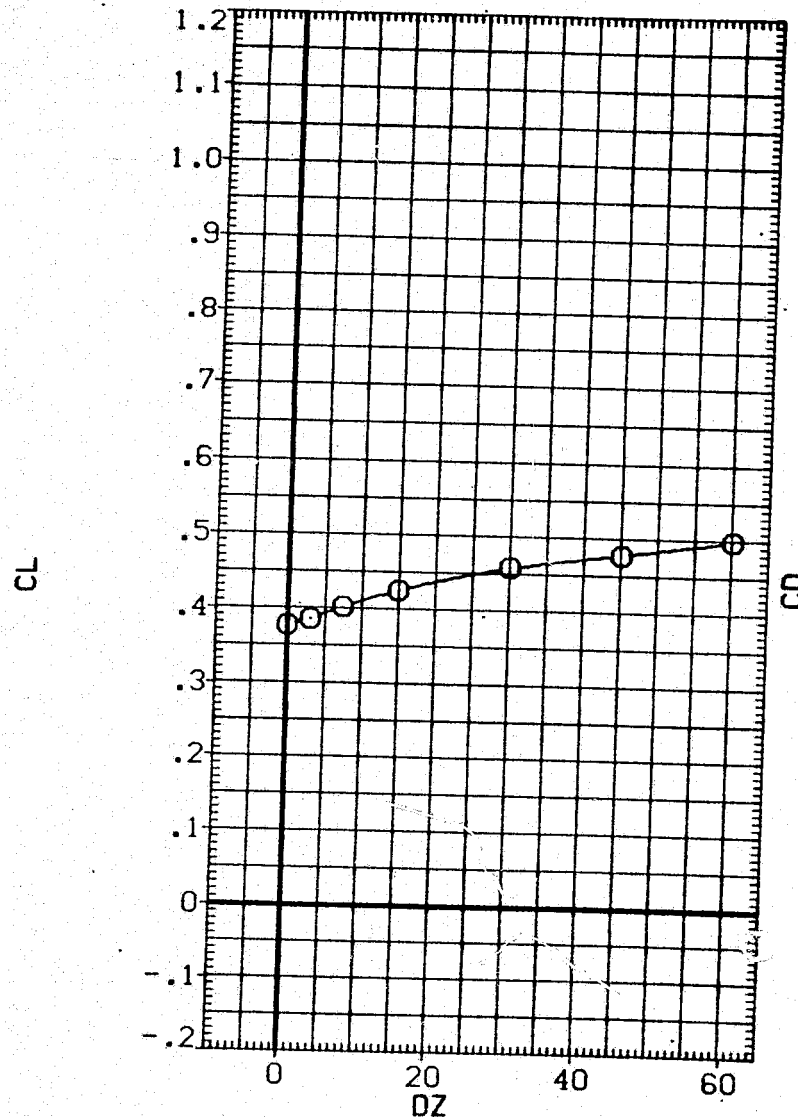


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA	PARAMETRIC VALUES			
○	10.000	ELV-1B .000	ELV-0B 3.000		
		ELEVON 5.000	MACH .600		
		BETAG -5.000	BETAC .000		
		PHI .000	DY 10.000		
		DX .000	ALPHAC 4.000		

REFERENCE INFORMATION		
SREF	5500.0000	SG.FTL
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1239.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

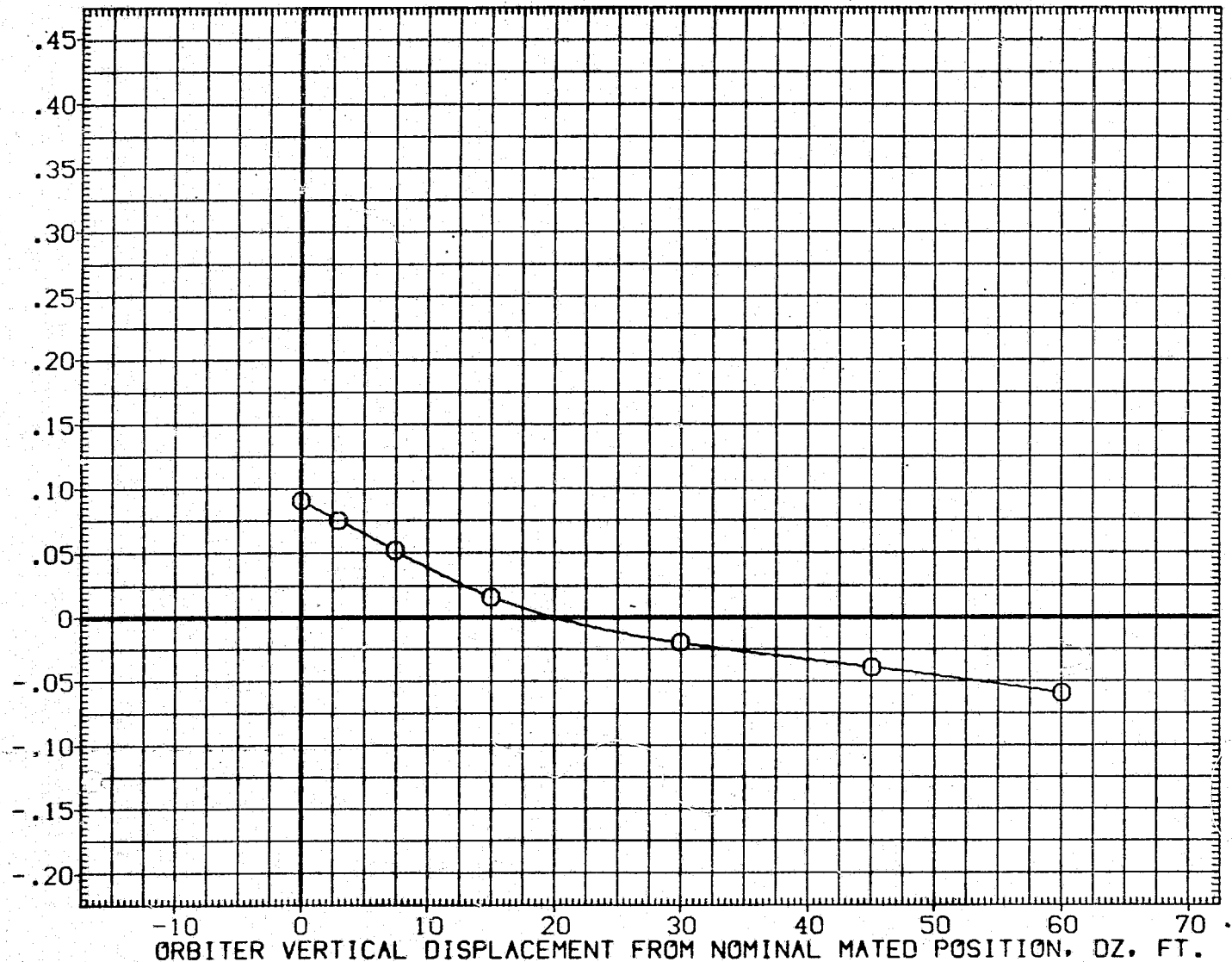


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA(MGN111)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	VALUES
○	10.000	ELEVON	.000	MACH	3.000
		BETA0	5.000	BETAC	.600
		PHI	-5.000	DY	.000
		DX	.000	ALPHAC	10.000
					4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

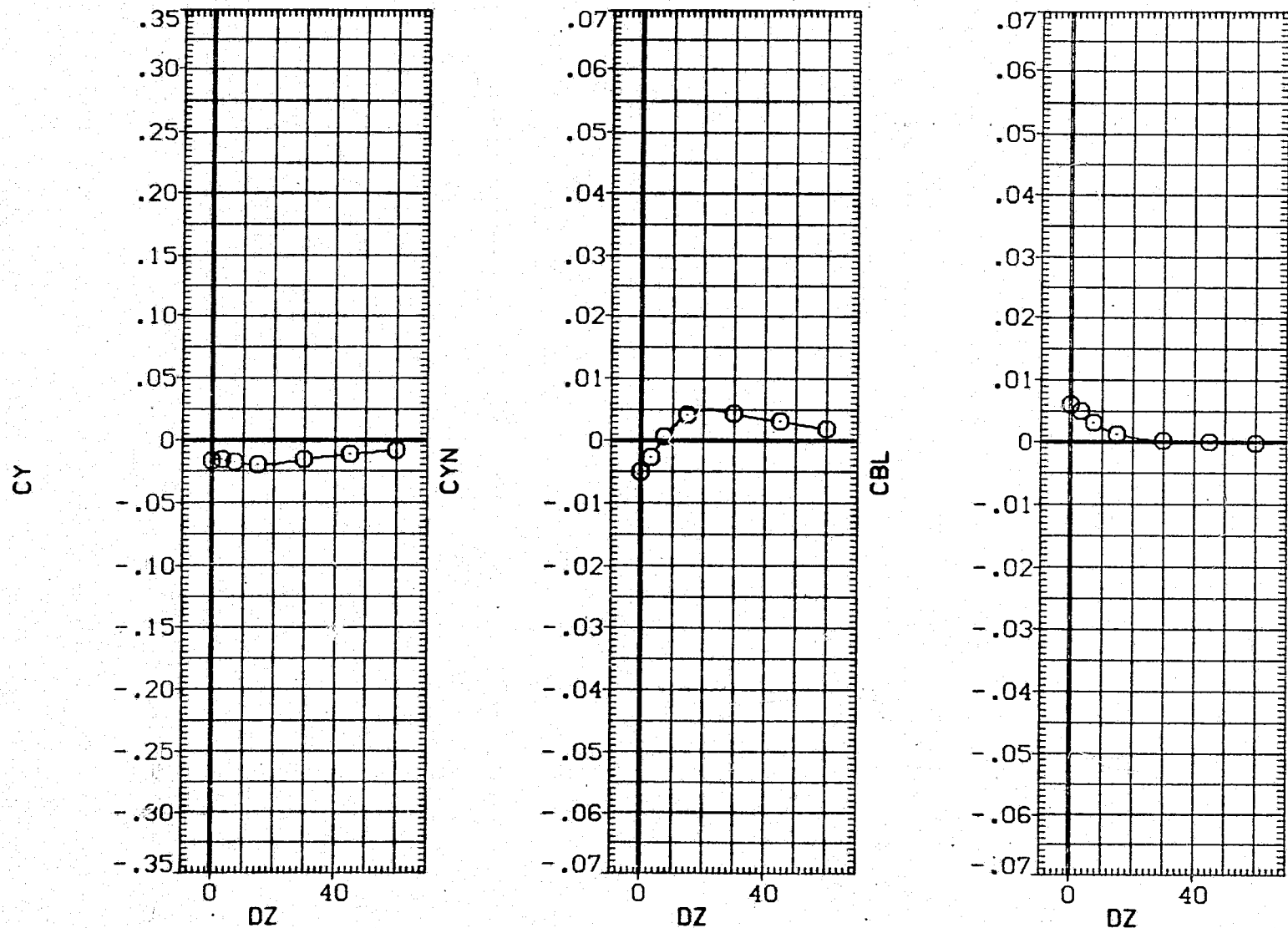


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB
○	10.000	.000	ELEVON	3.000
		5.000	MACH	.600
		-5.000	BETAC	.000
		.000	DY	10.000
		.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

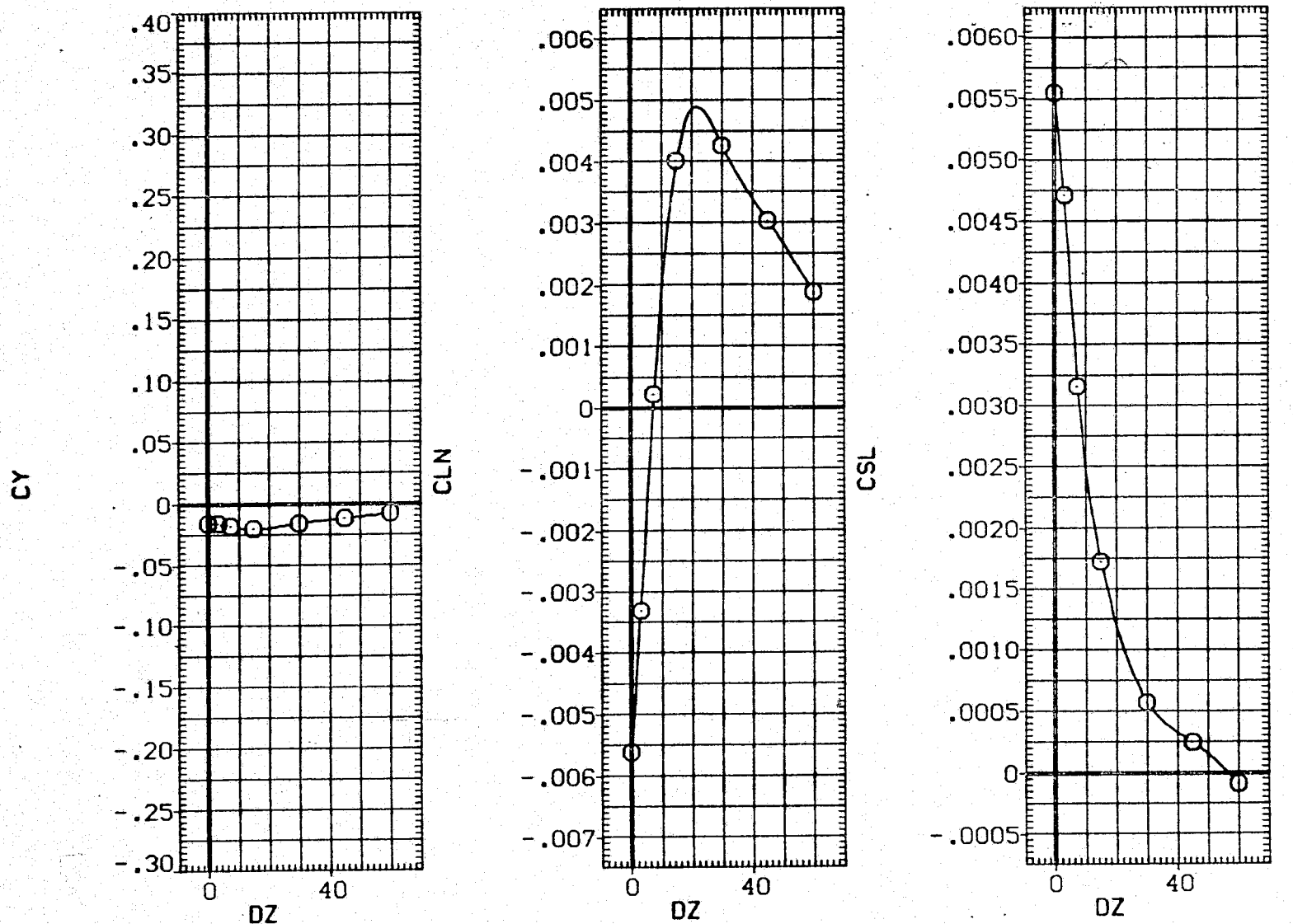


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
		ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

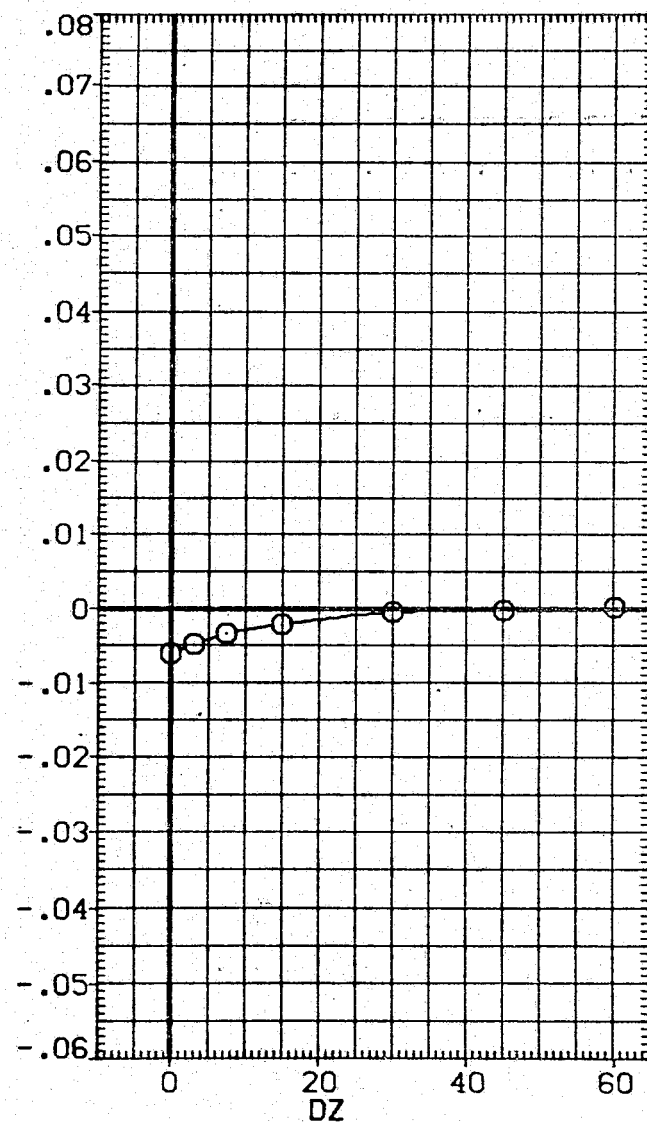
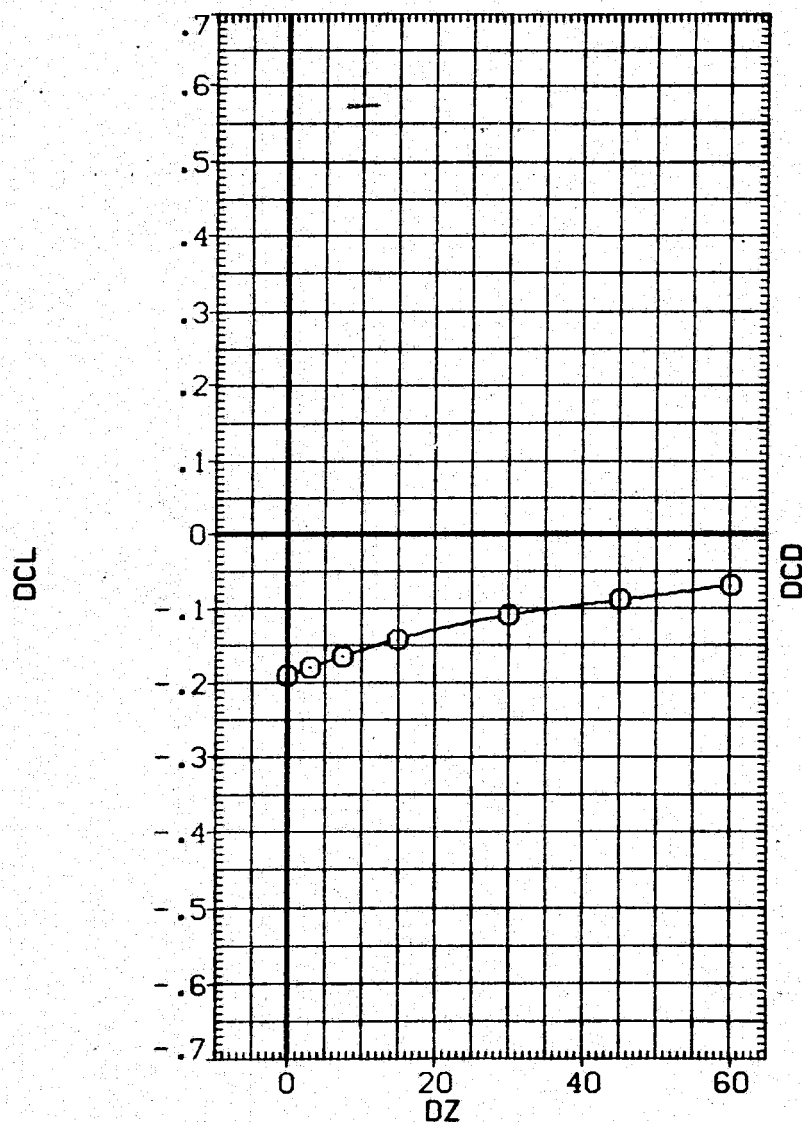


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL
OALPHA0
10.000ALPHAC
ELV-IB
ELEVON
PHI
DY

PARAMETRIC VALUES

4.000	BETAC	.000
.000	ELV-OB	3.000
5.000	MACH	.600
.000	DX	.000
10.000	BETA0	-5.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

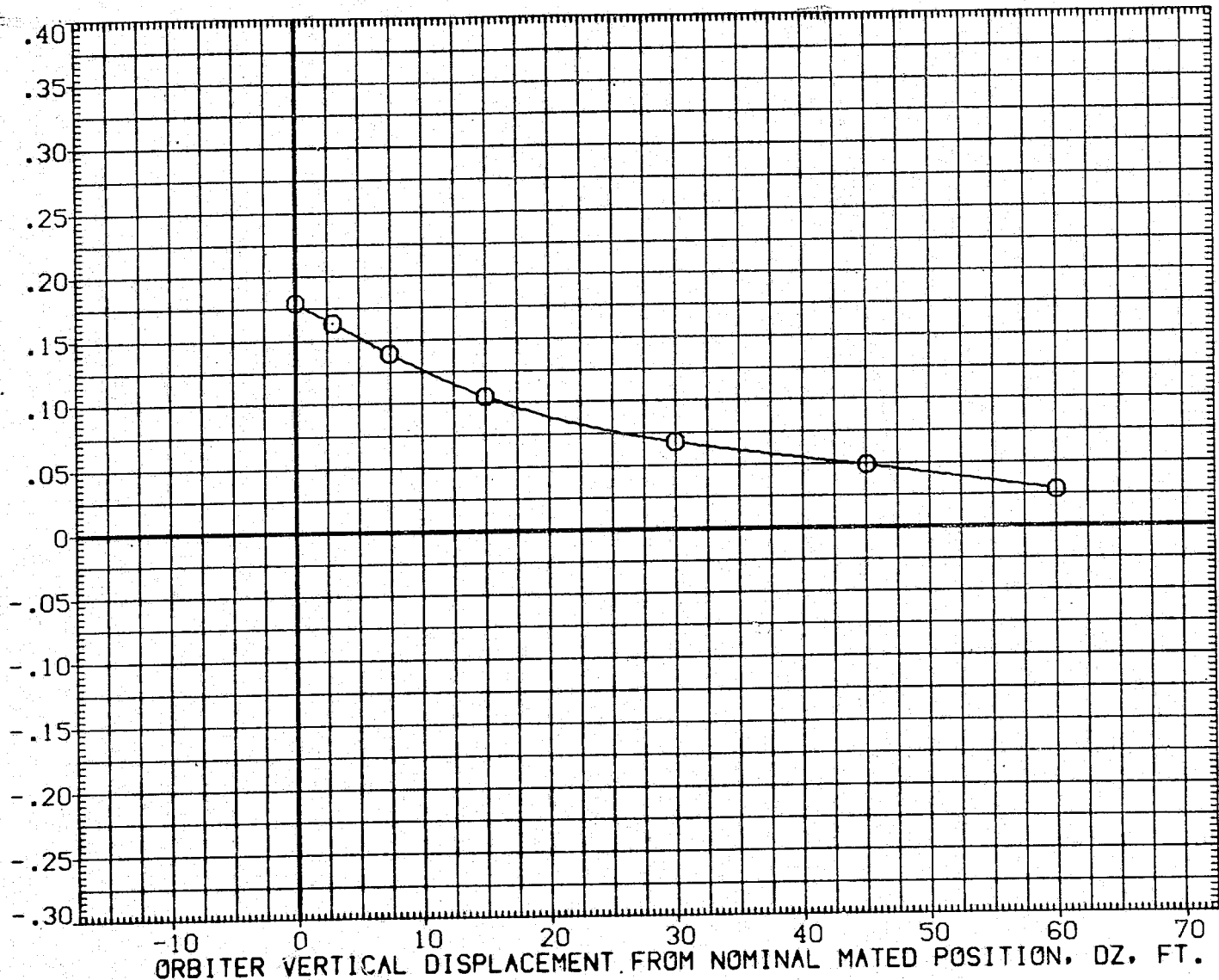


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 (747/1 01 S1) - (747/1)

D/S (111 - 035)(UGN111)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
		ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

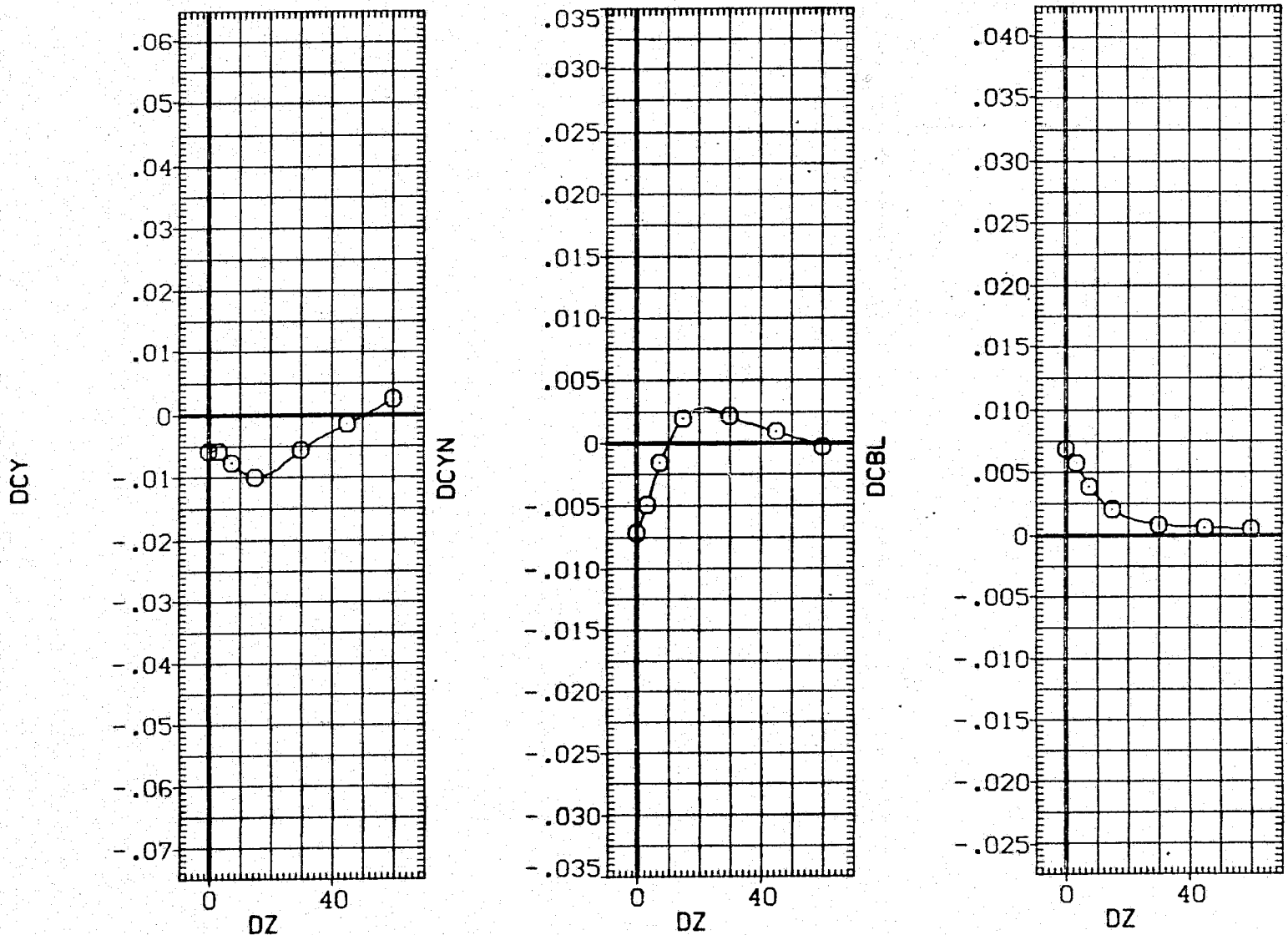


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
		ELV-TB	.000	ELV-OB	3.000
		ELEVON	5.000	NACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

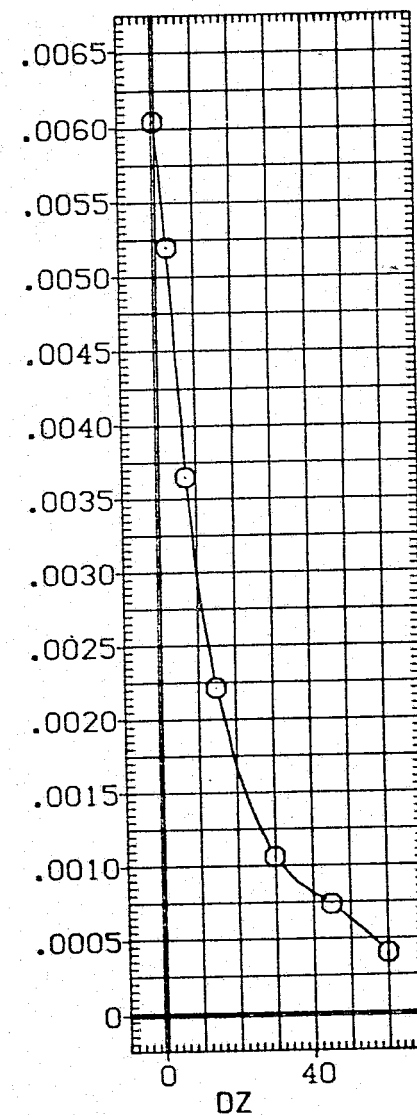
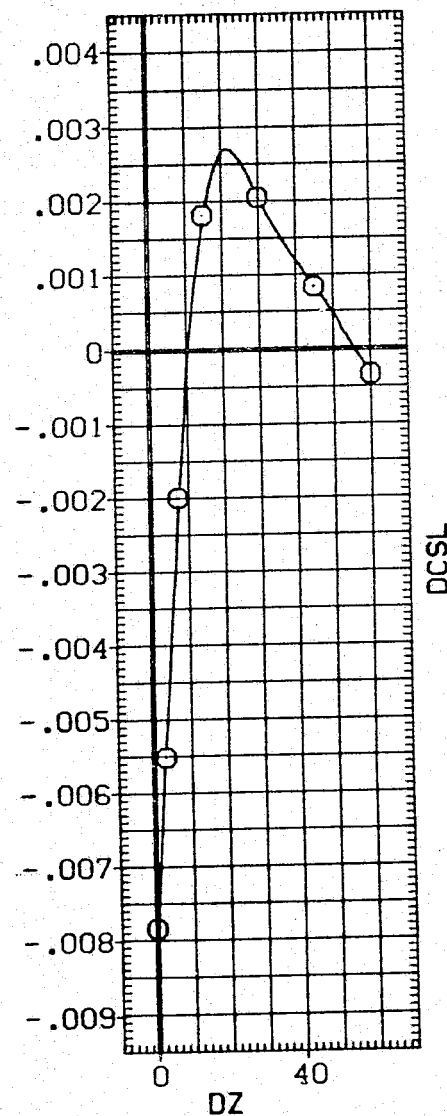
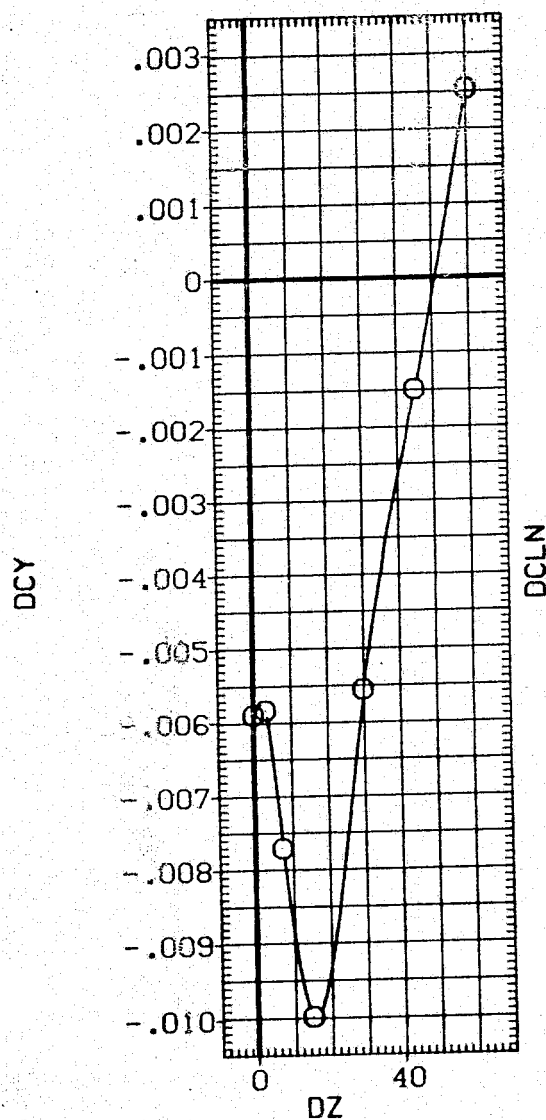


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN113)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	1.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

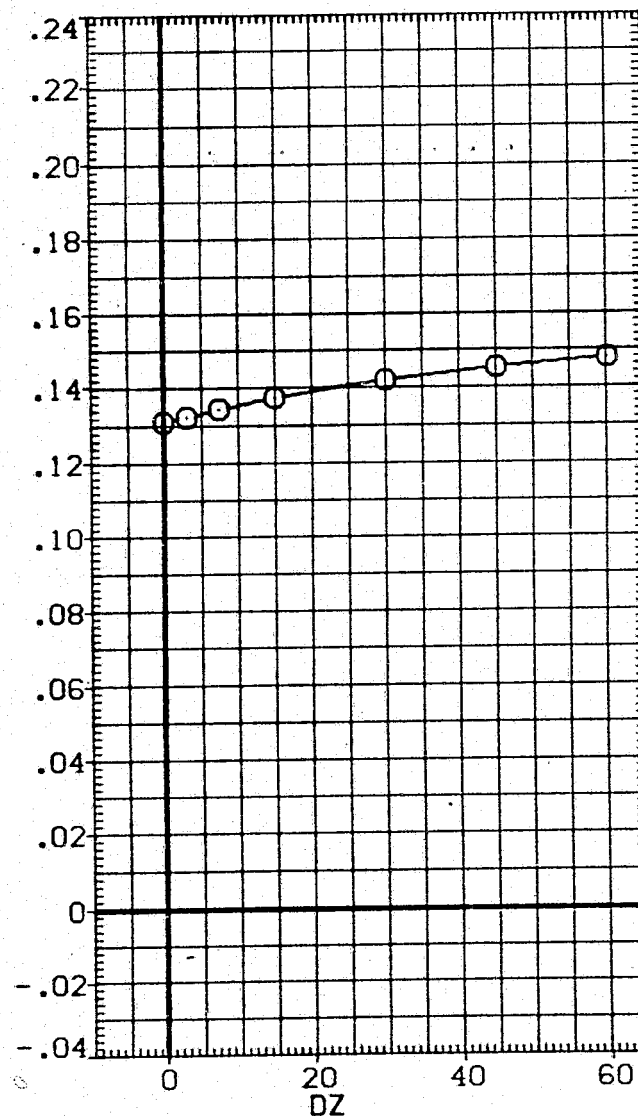
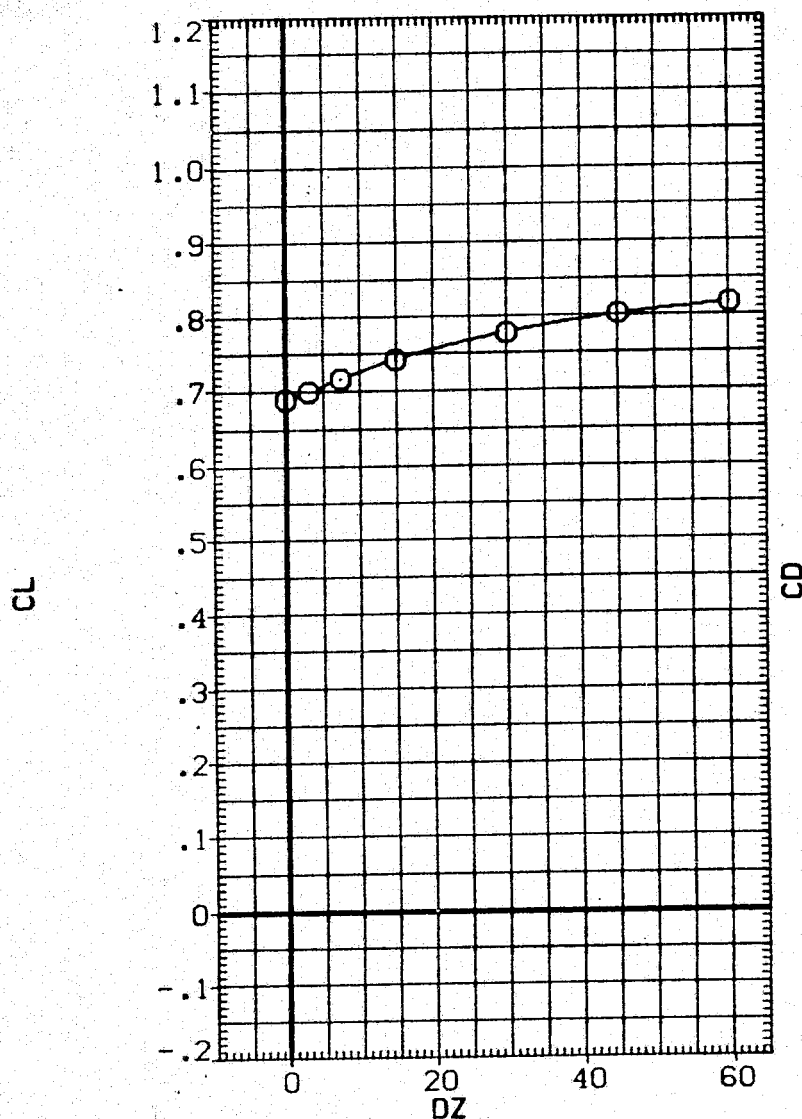


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

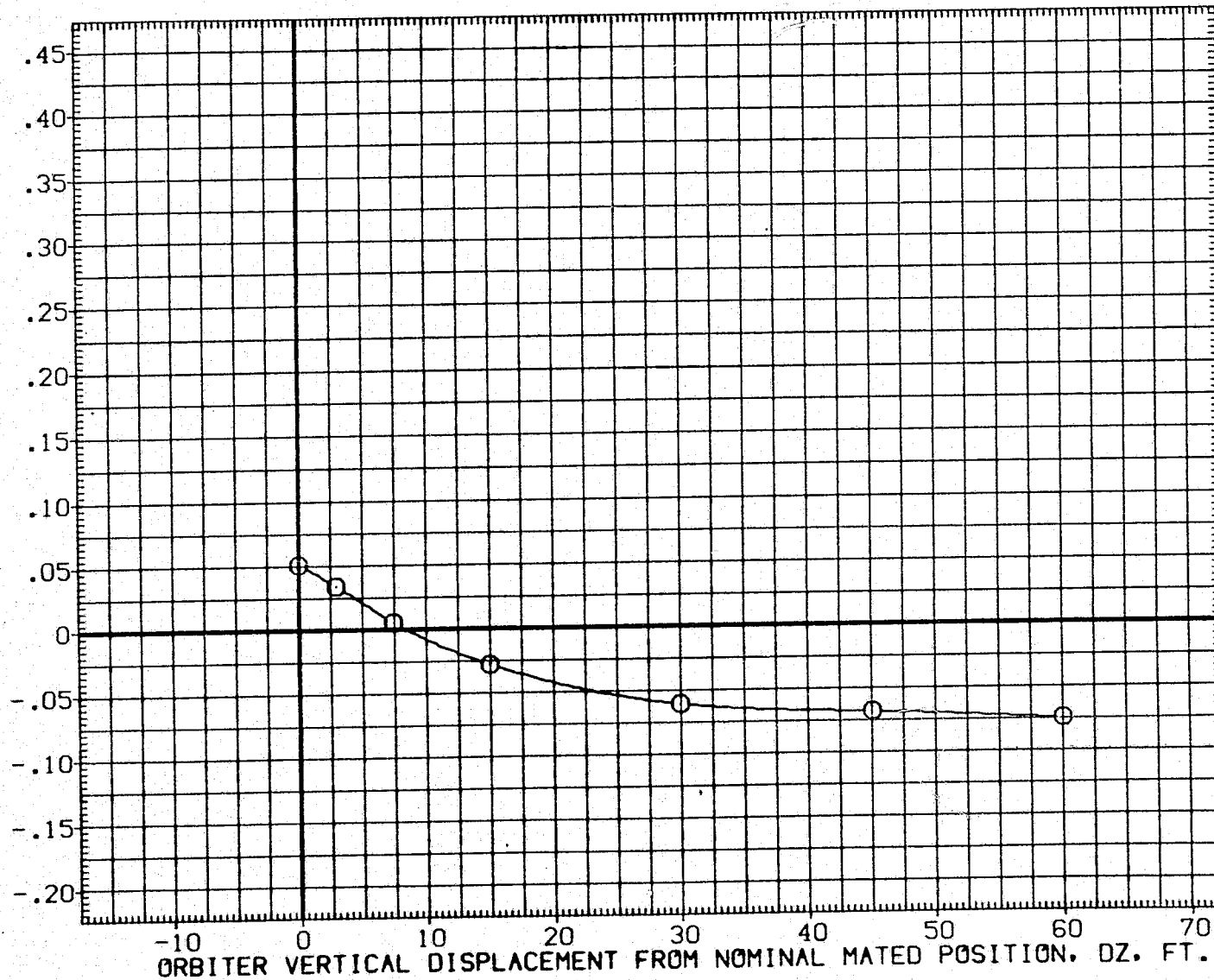


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

• SYMBOL	ALPHA0	PARAMETRIC VALUES		
○	14.000	ELV-IB	.000	ELV-OB 3.000
		ELEVON	5.000	MACH .600
		BETA0	-5.000	BETAC .000
		PHI	.000	DY 10.000
		DX	.000	ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

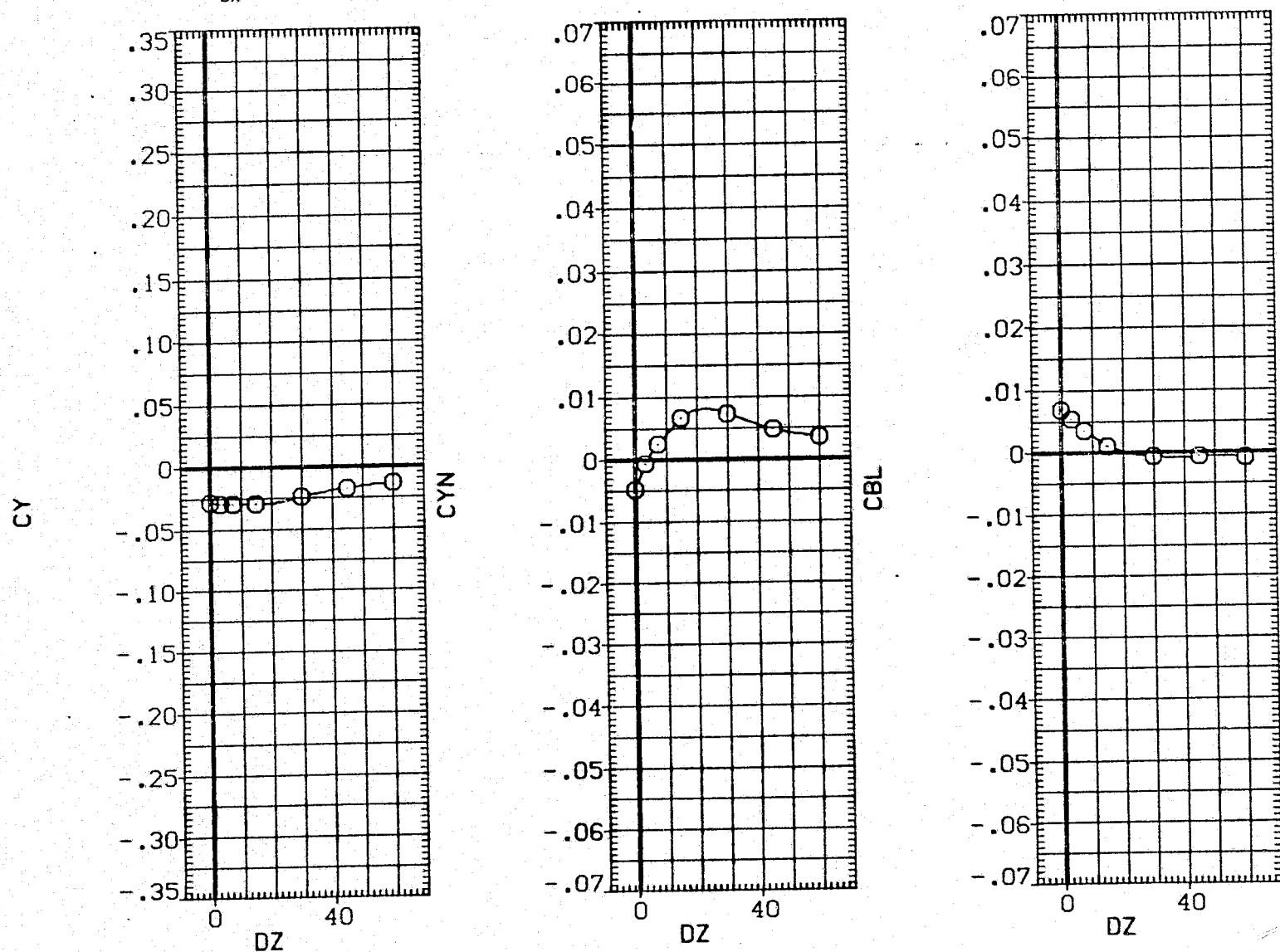


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.XC
YMRF	.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

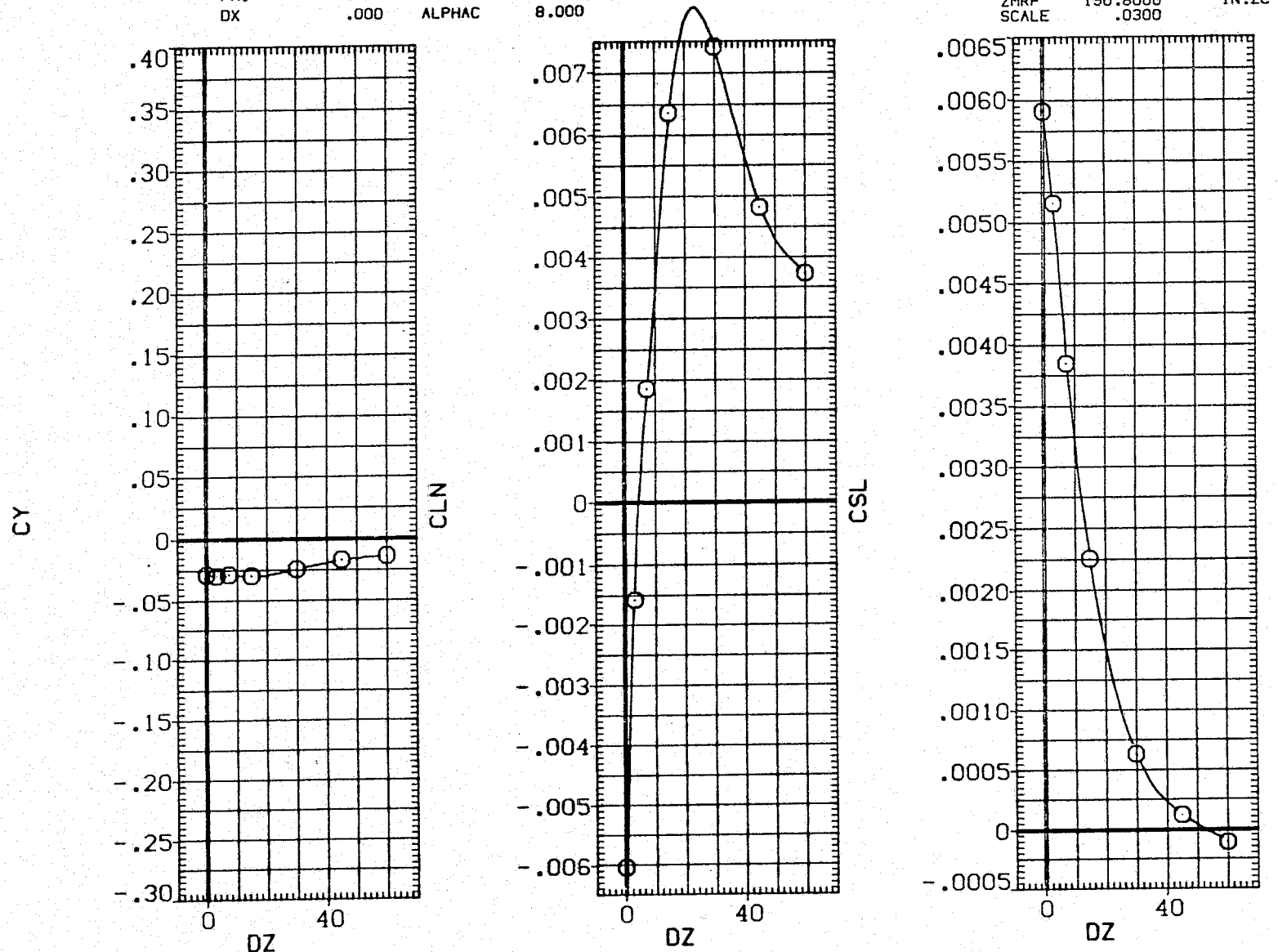


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	14.000	ALPHAC	8.000	BETAC	.000
		ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.XC
YMRF	.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

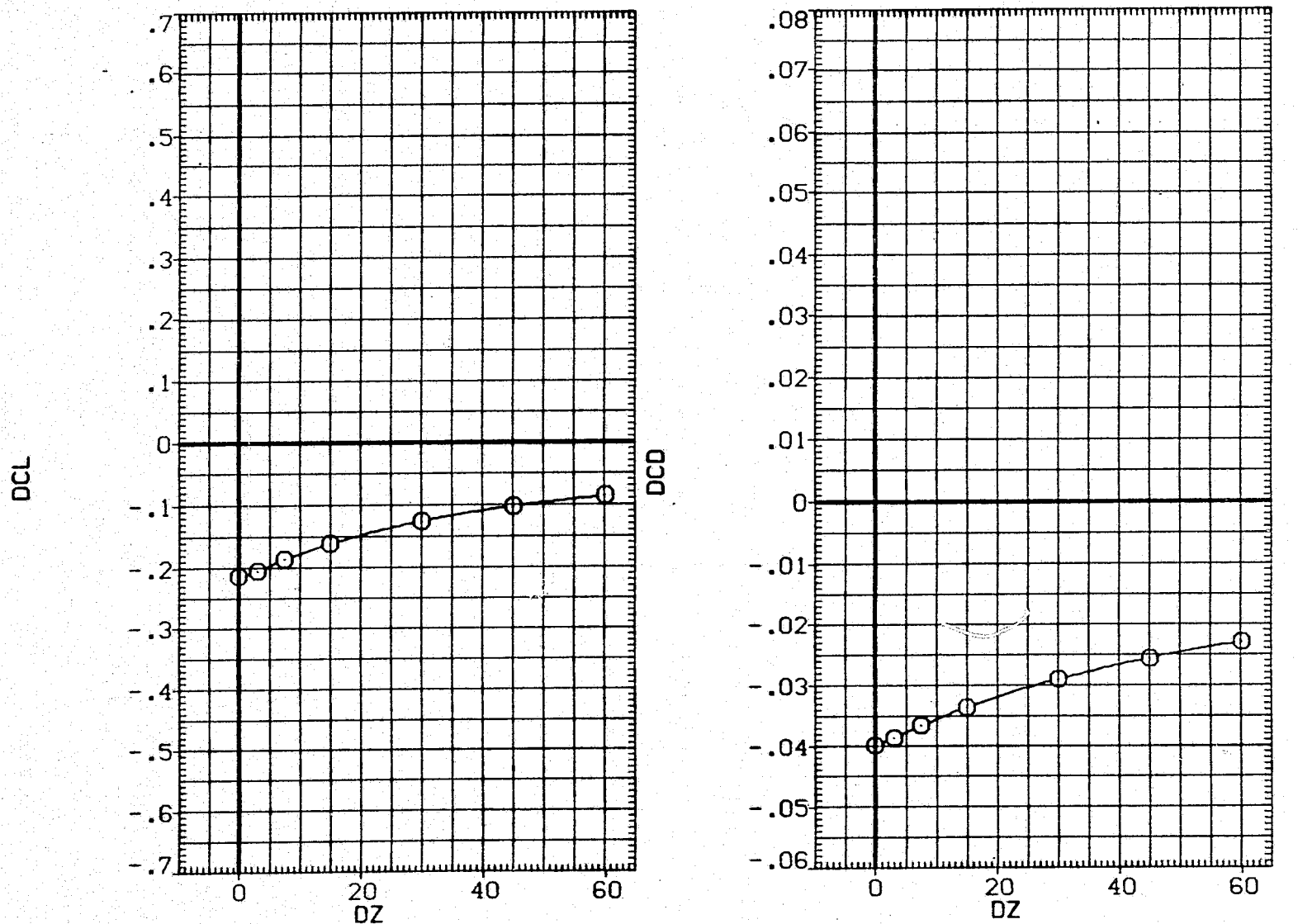


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL
○ALPHA0
14.000

PARAMETRIC VALUES

ALPHA0	8.000	BETA0	.000
ELV-IB	.000	ELV-OB	3.000
ELEVON	5.000	MACH	.600
PHI	.000	DX	.000
DY	10.000	BETA0	-5.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

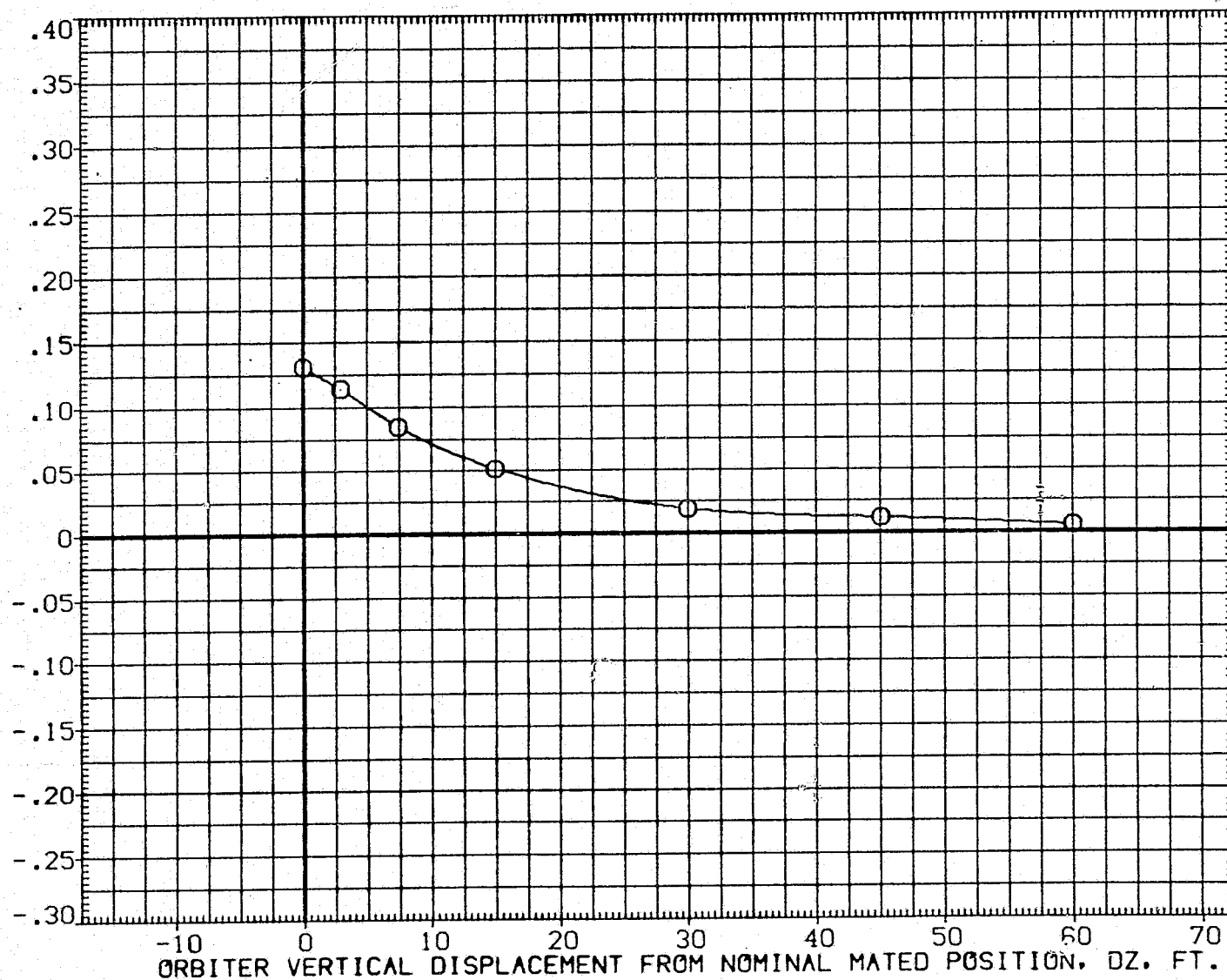


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○

ALPHA0

14.000

PARAMETRIC VALUES

ALPHAC

8.000

BETAC

.000

ELV-IB

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

PHI

.000

DX

.000

DY

10.000

BETA0

-5.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

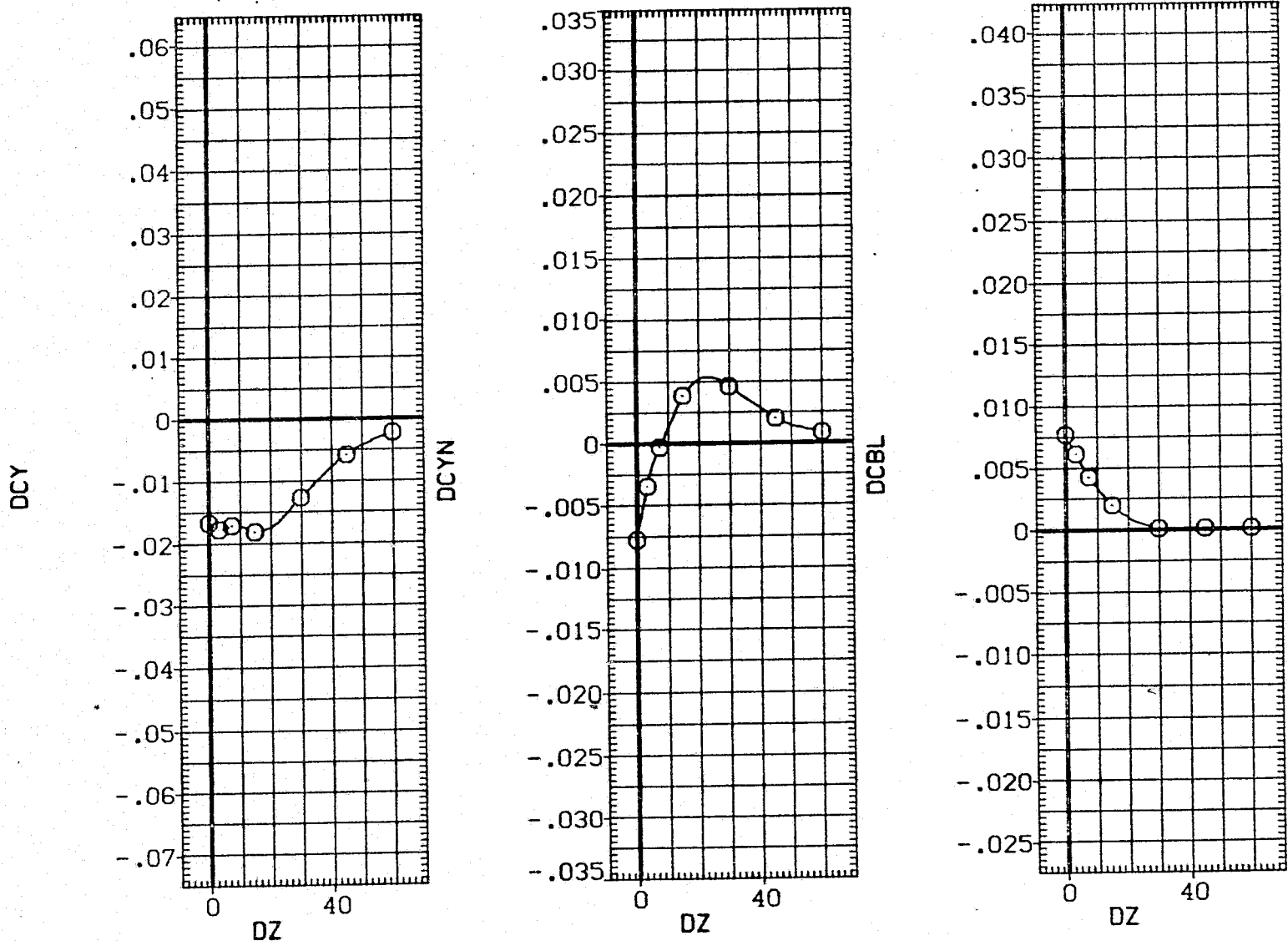


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	14.000	ALPHAC	8.000	BETAC	.000
		ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

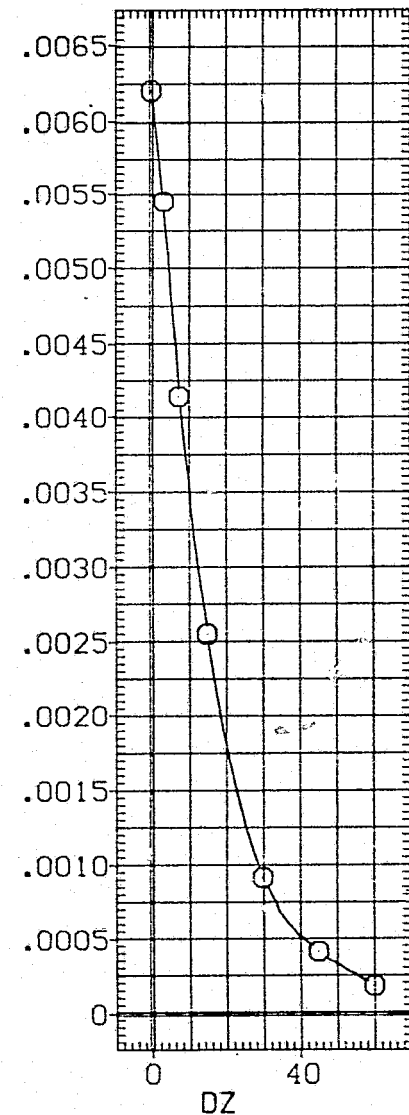
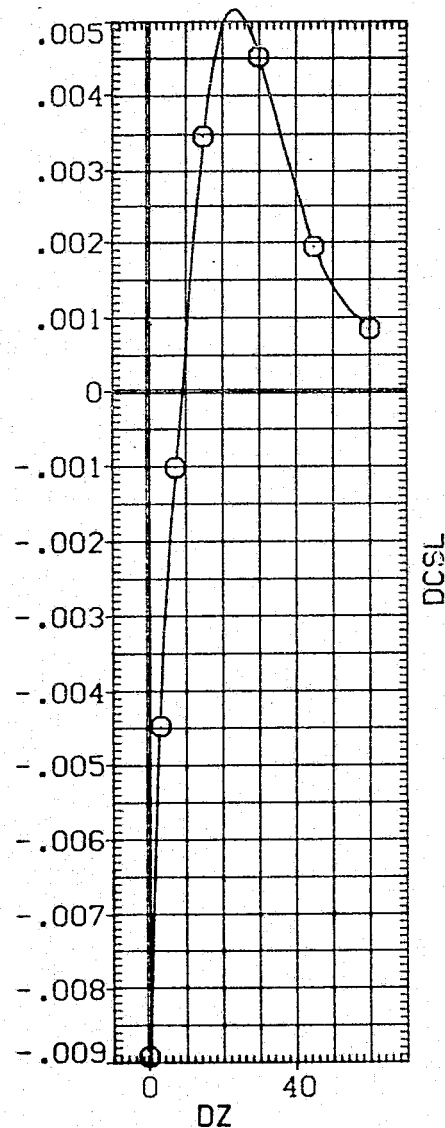
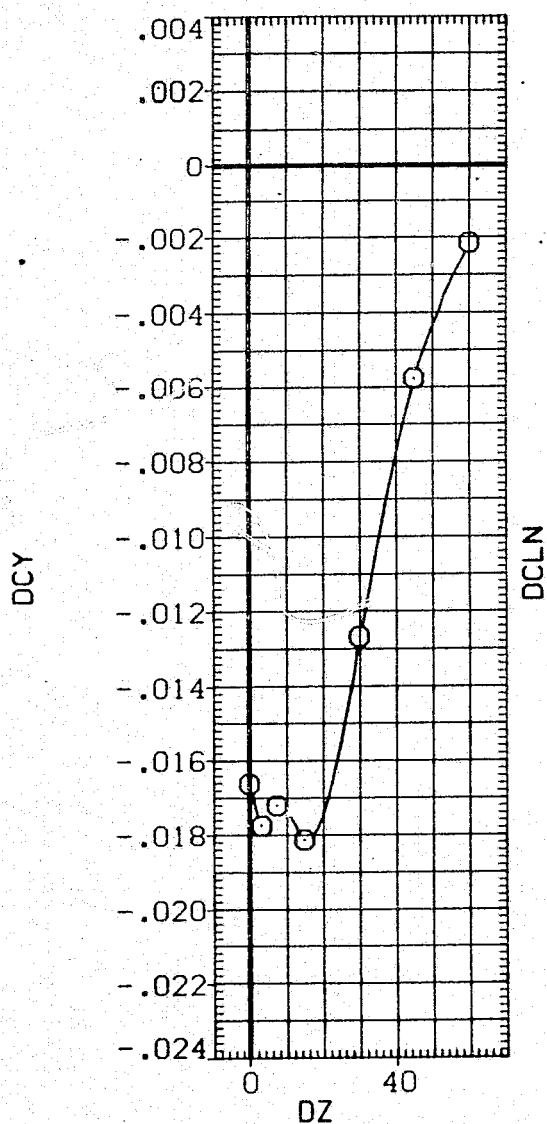


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA(MGN112)

SYMBOL ○ □	ALPHA0	10.000	ELV-1B	.000	ELV-0B	3.000
		14.000	ELEVON	5.000	MACH	.600
			PHI	.000	BETA0	-5.000
			BETAC	.000	DY	10.000
			DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	.5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

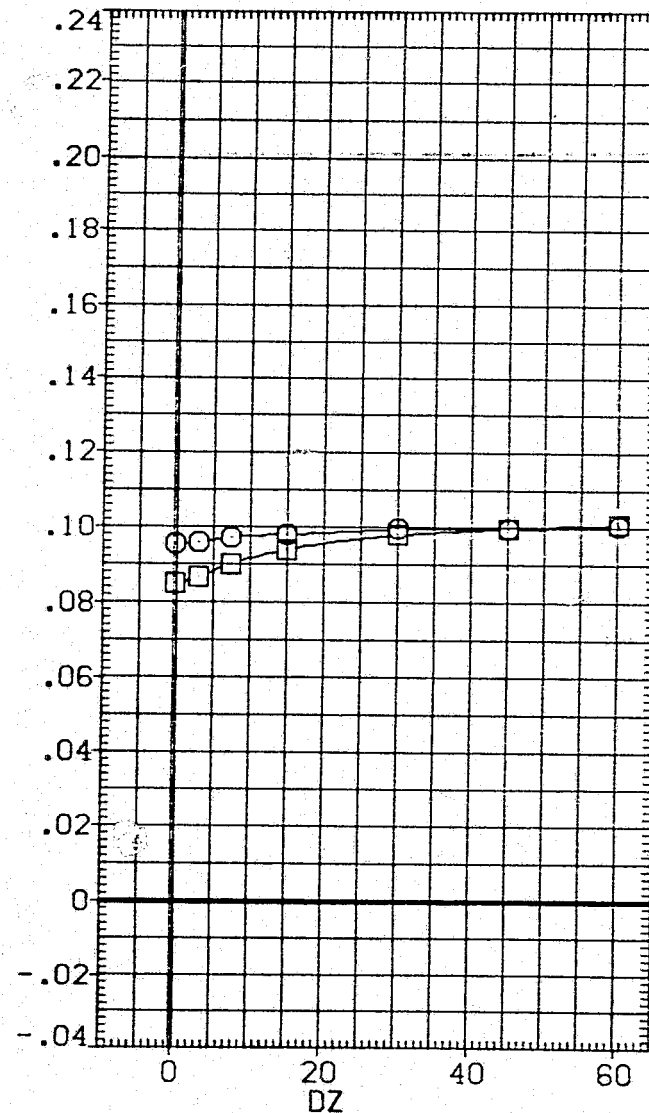
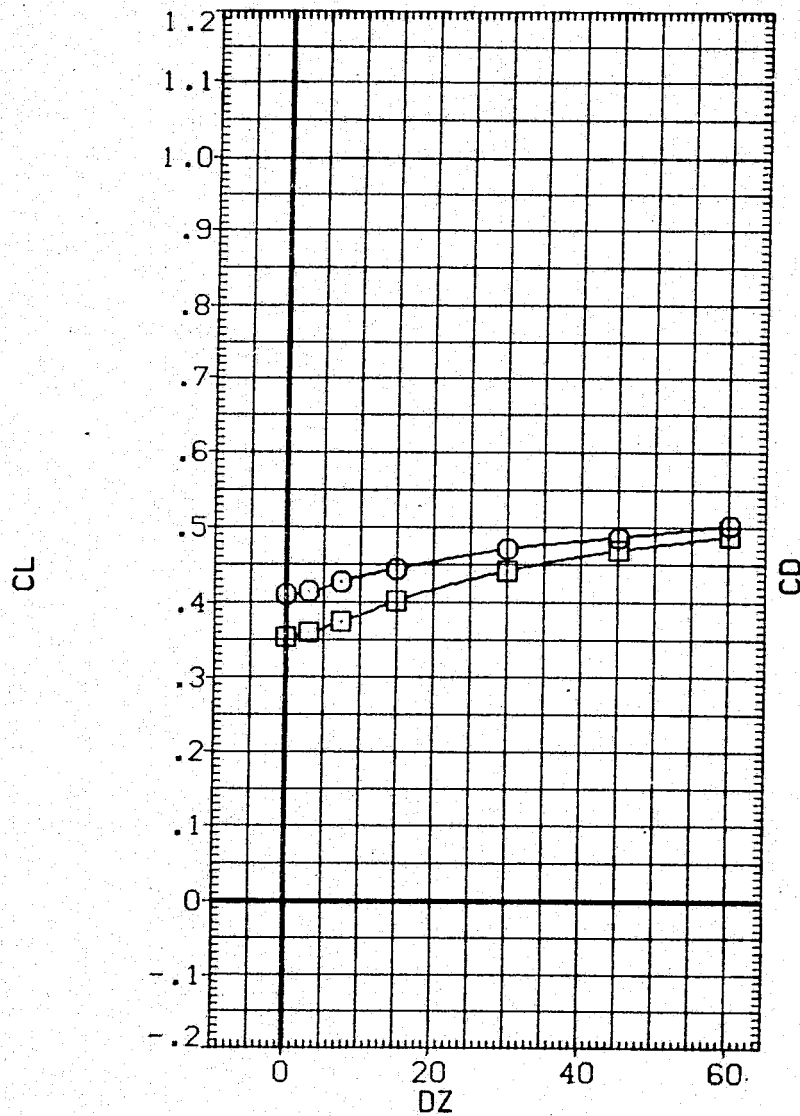


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-18	.030	ELV-08	3.000
□	14.000	ELEVON	5.007	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	.000	DY	10.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

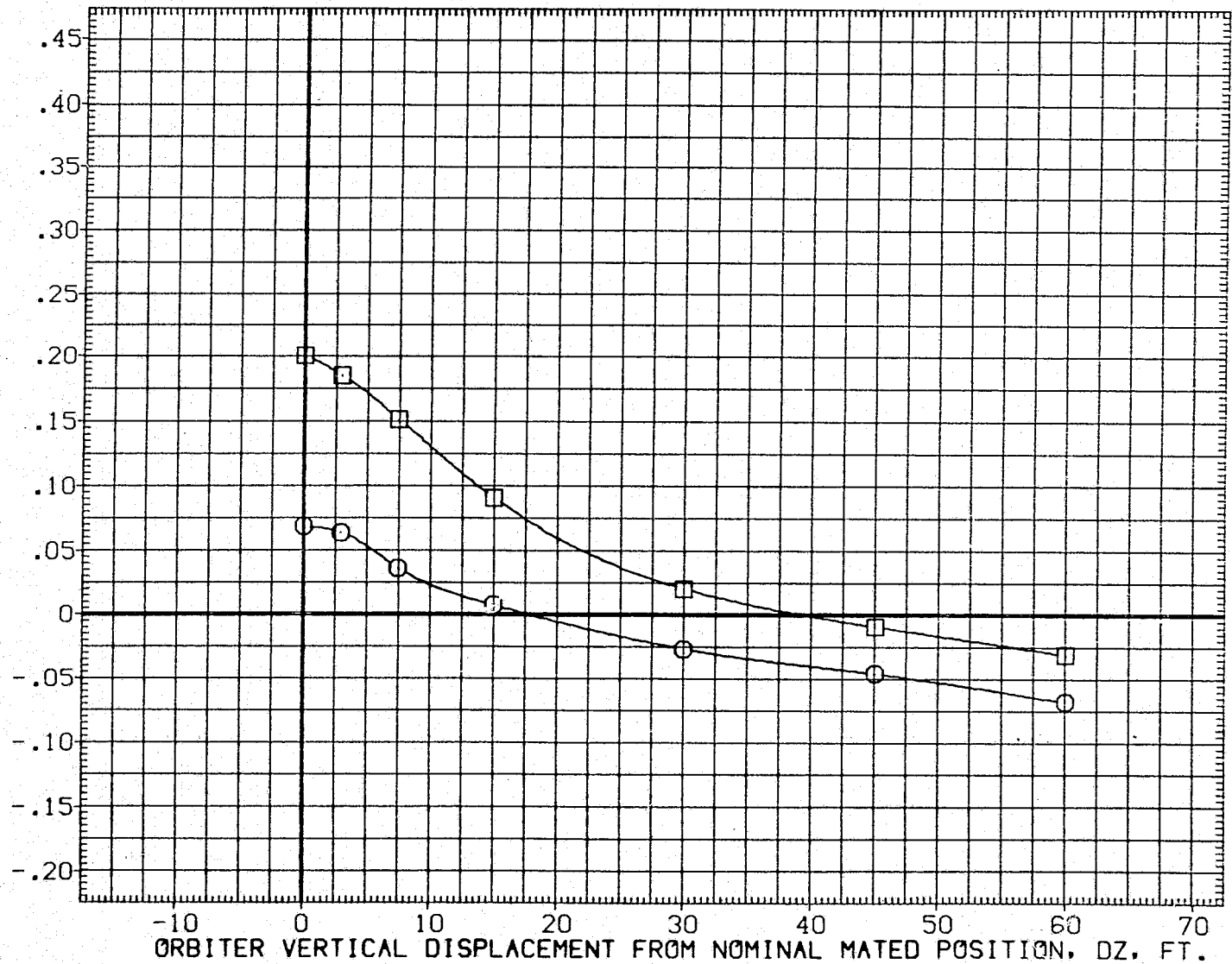


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN112)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ELV-18	.000	ELV-08	
○	14.000	ELEVON	5.000	MACH	3.000
□		PHI	.000	BETA0	.600
		BETAC	.000	DY	-5.000
		DX	10.000	ALPHAC	10.000
					4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

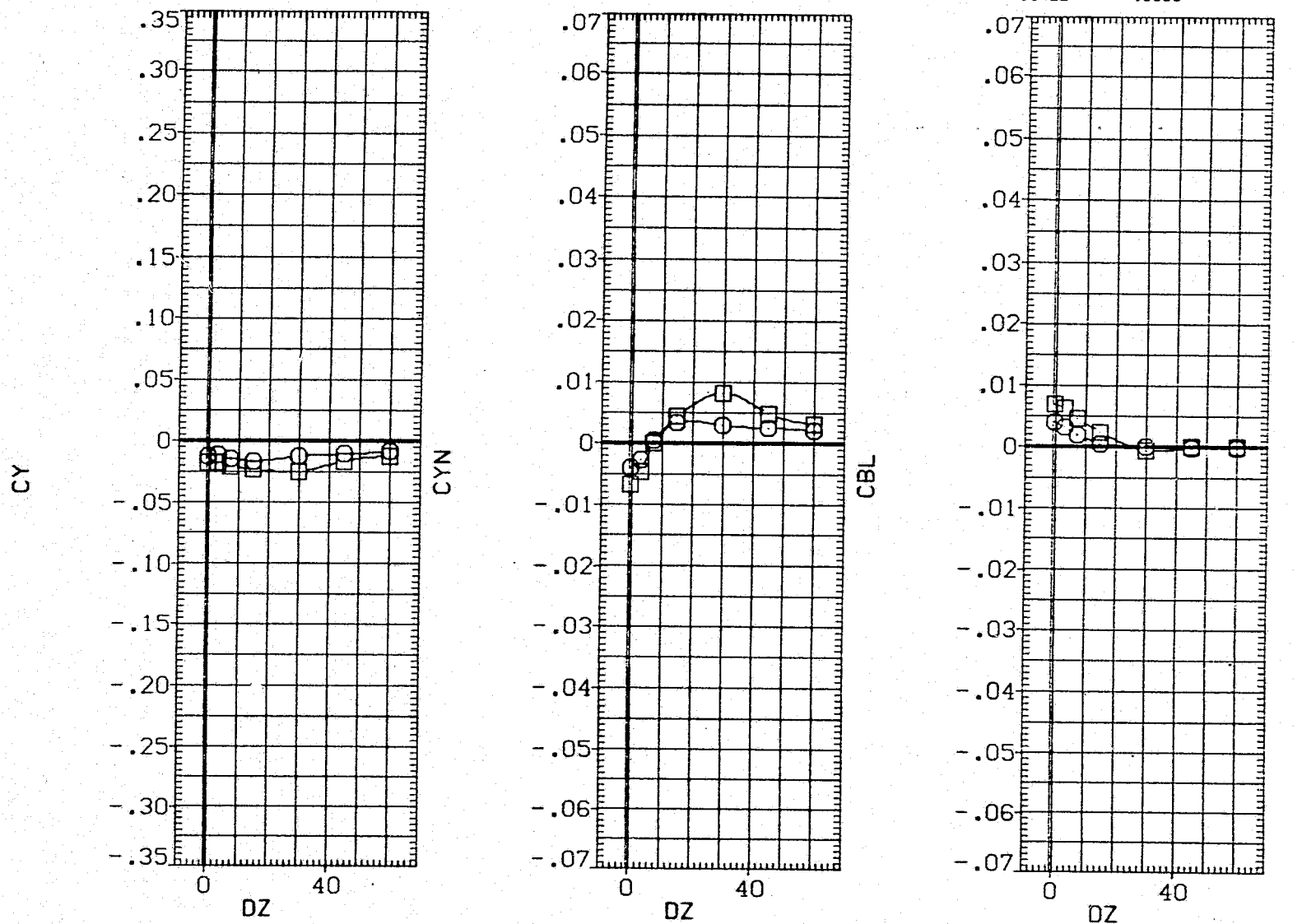


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEV0N 5.000 MACH .600
		PHI .000 BETA0 -5.000
		BETAC .000 DY 10.000
		DX 10.000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

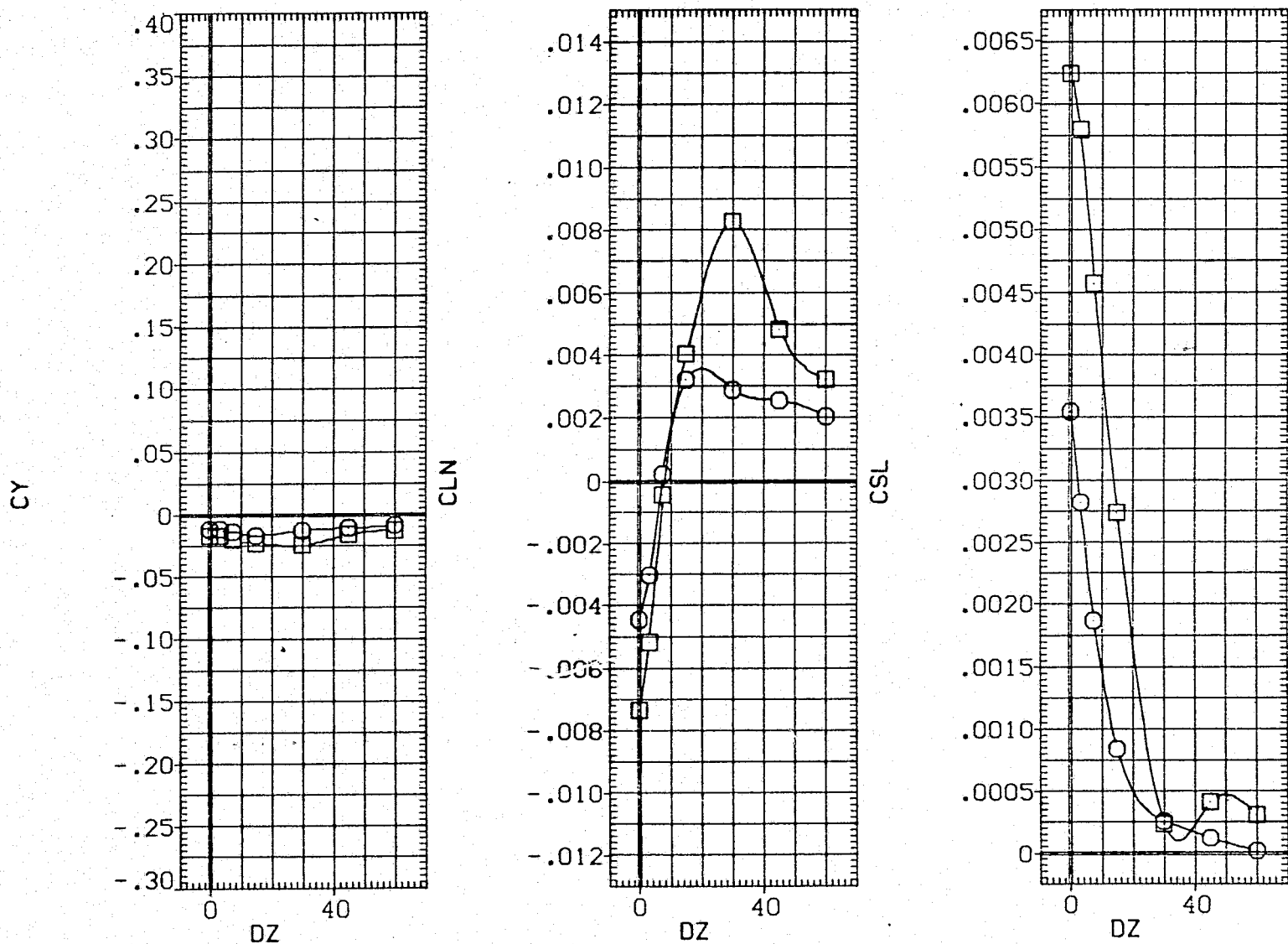


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 (747/1 01 S1) - (747/1)

D/S (112 - 035) (UGN112)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

.000

10.000

BETAC

ELV-0B

MACH

DX

BETA0

.000

3.000

.600

10.000

-5.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

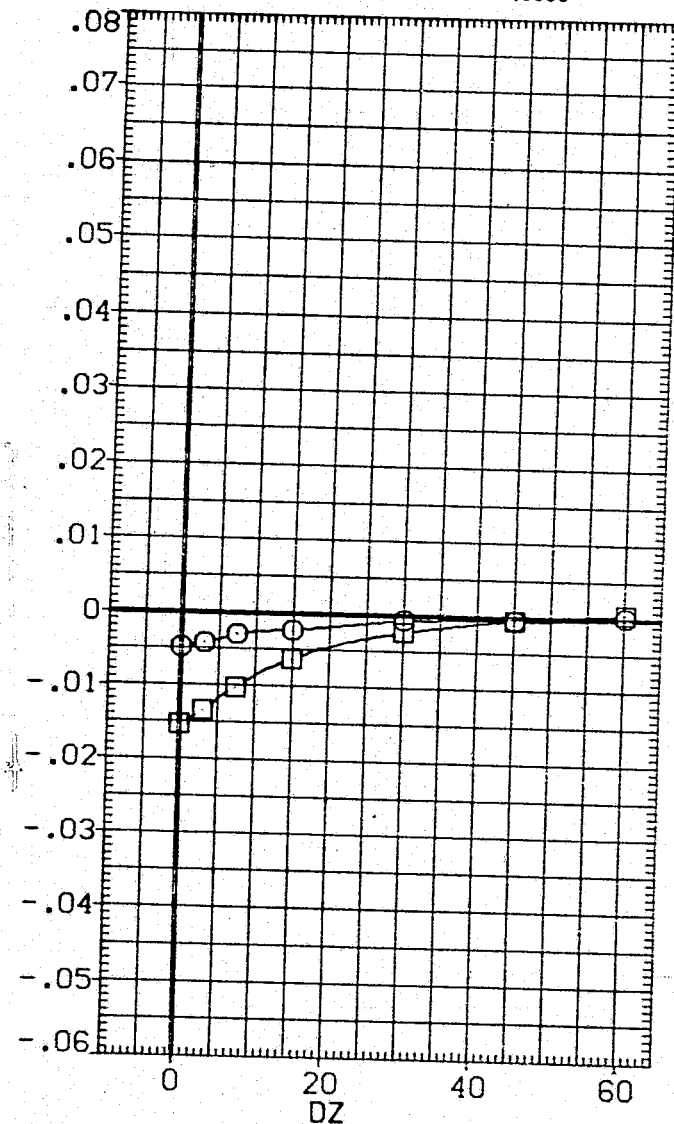
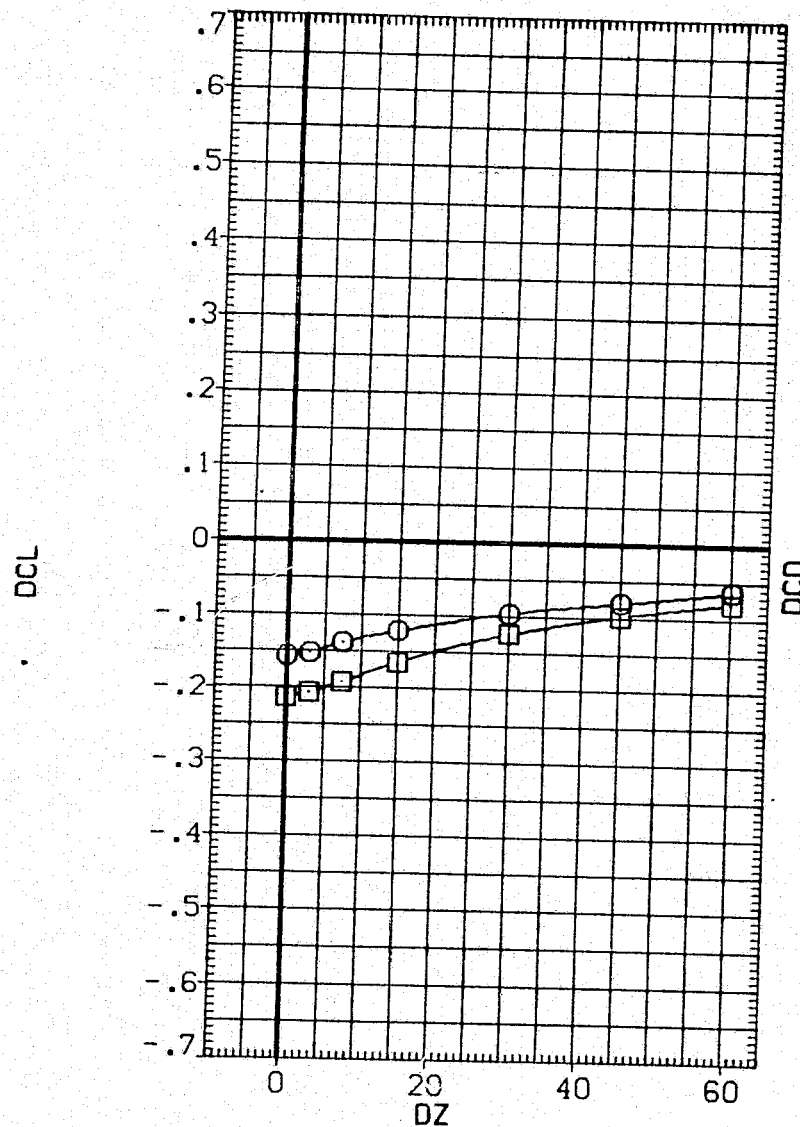


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

.000

ELV-IB

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

PHI

.000

DX

10.000

DY

10.000

BETA0

-5.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

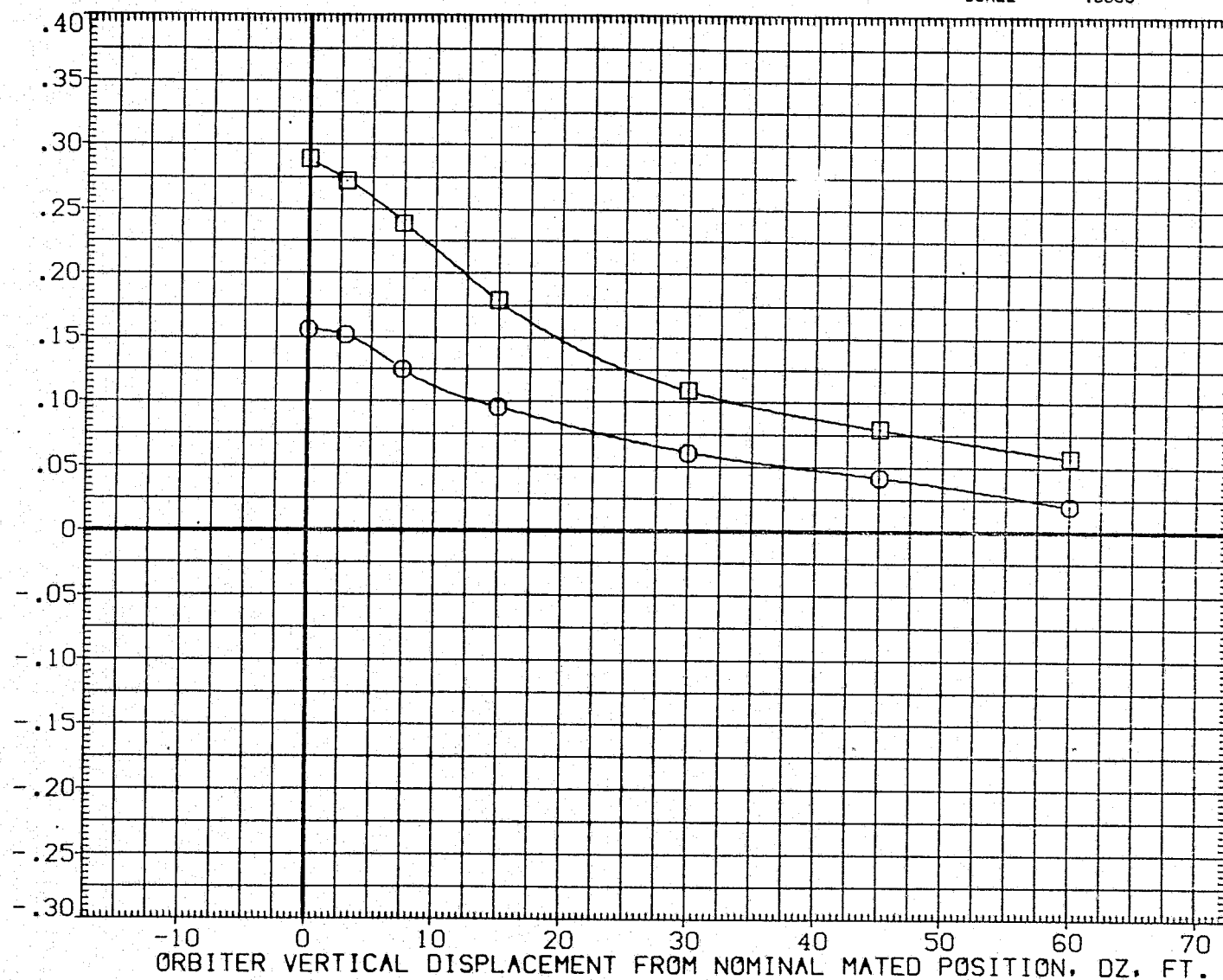


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	4.000	BETAC	.000
○	14.000	ELV-1B	.000	ELV-0B	3.000
□		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

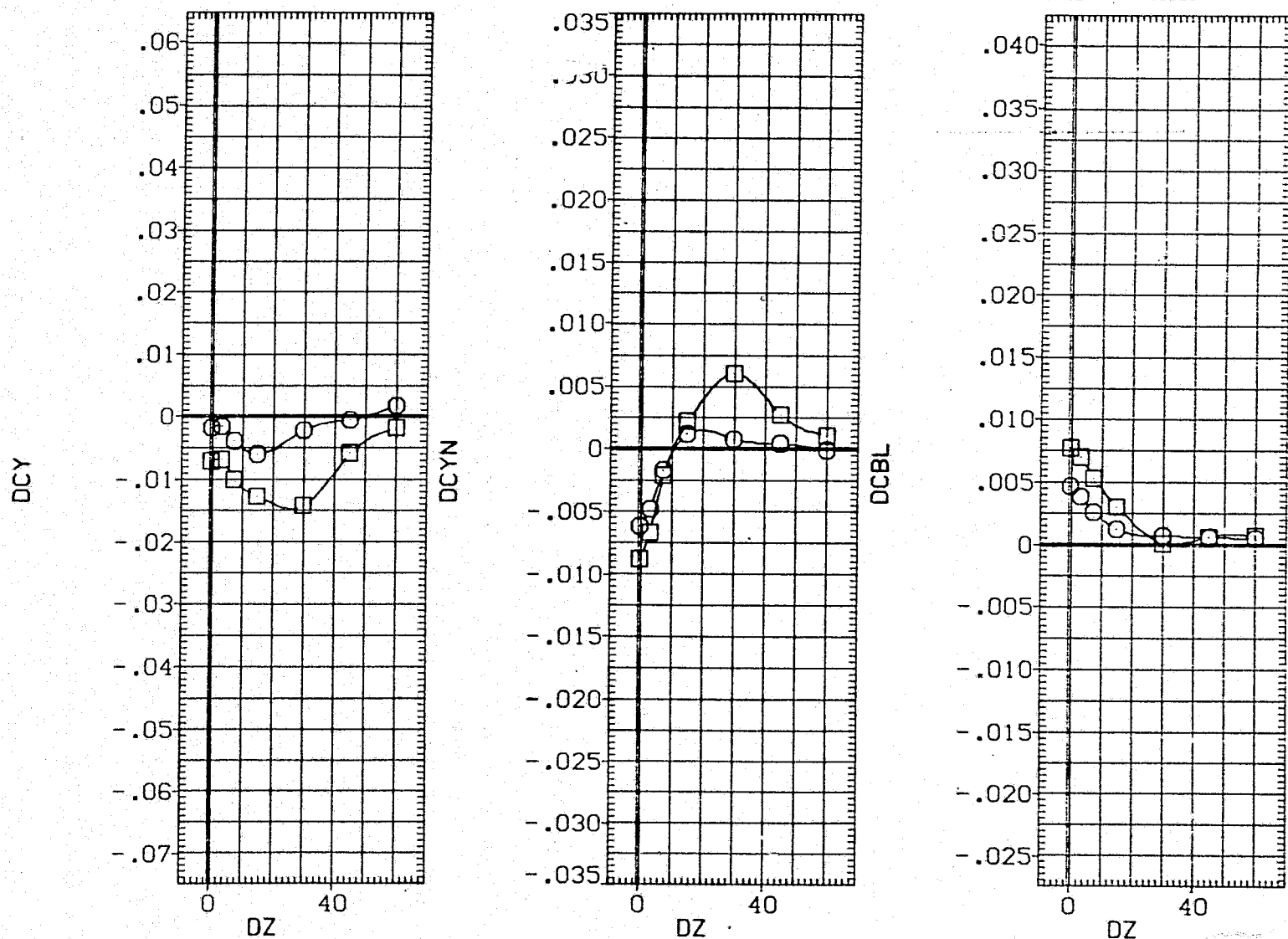


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

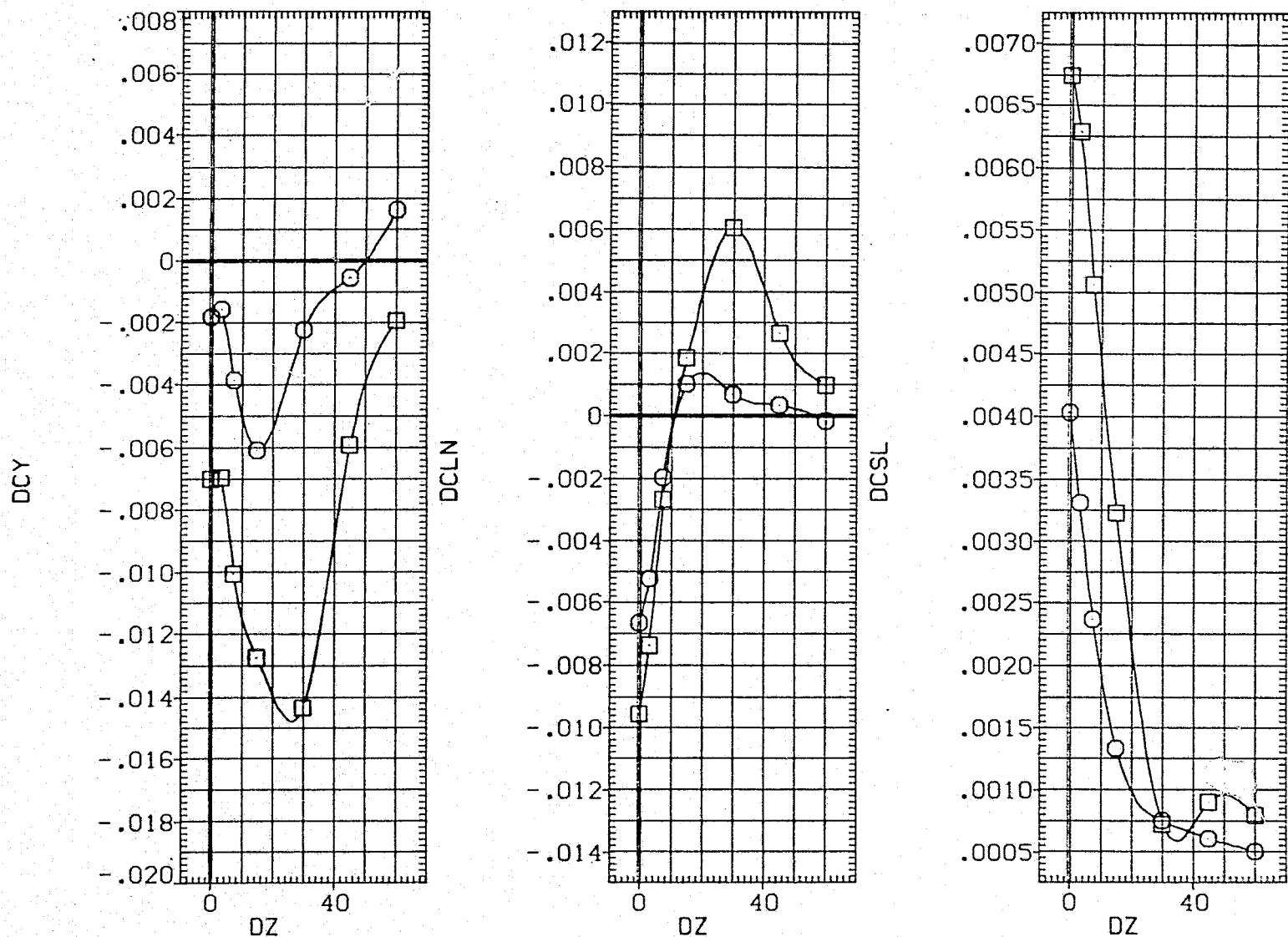


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-18	PARAMETRIC VALUES	ELV-08	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	PHI	5.000	BETA0	.600
		BETAC	.000	DY	-5.000
		DX	10.000	ALPHAC	10.000
					8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

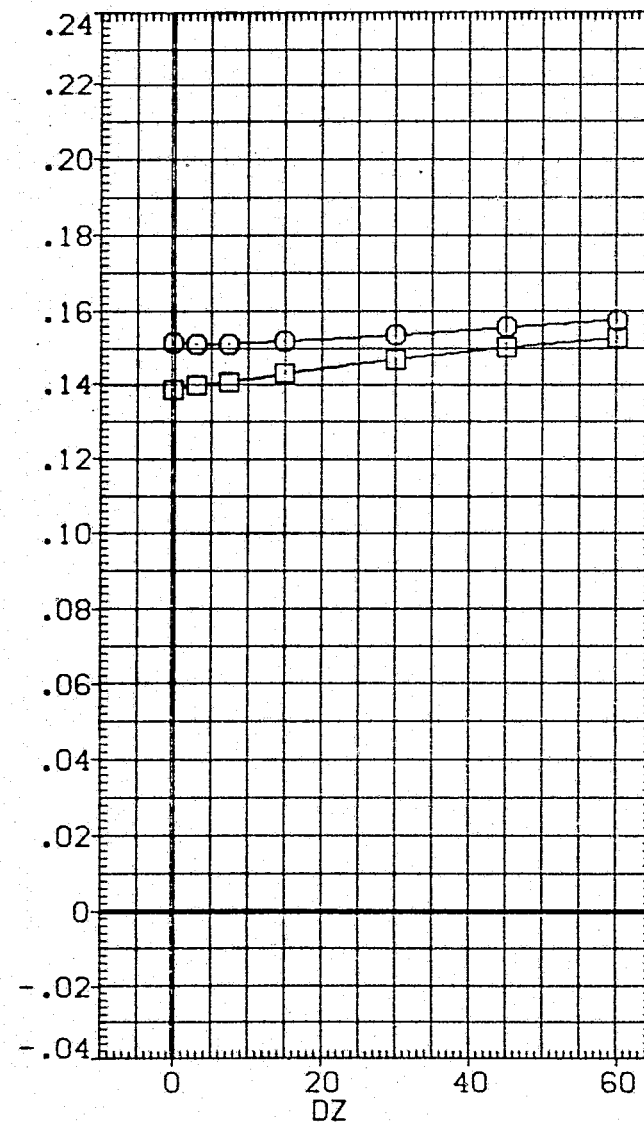
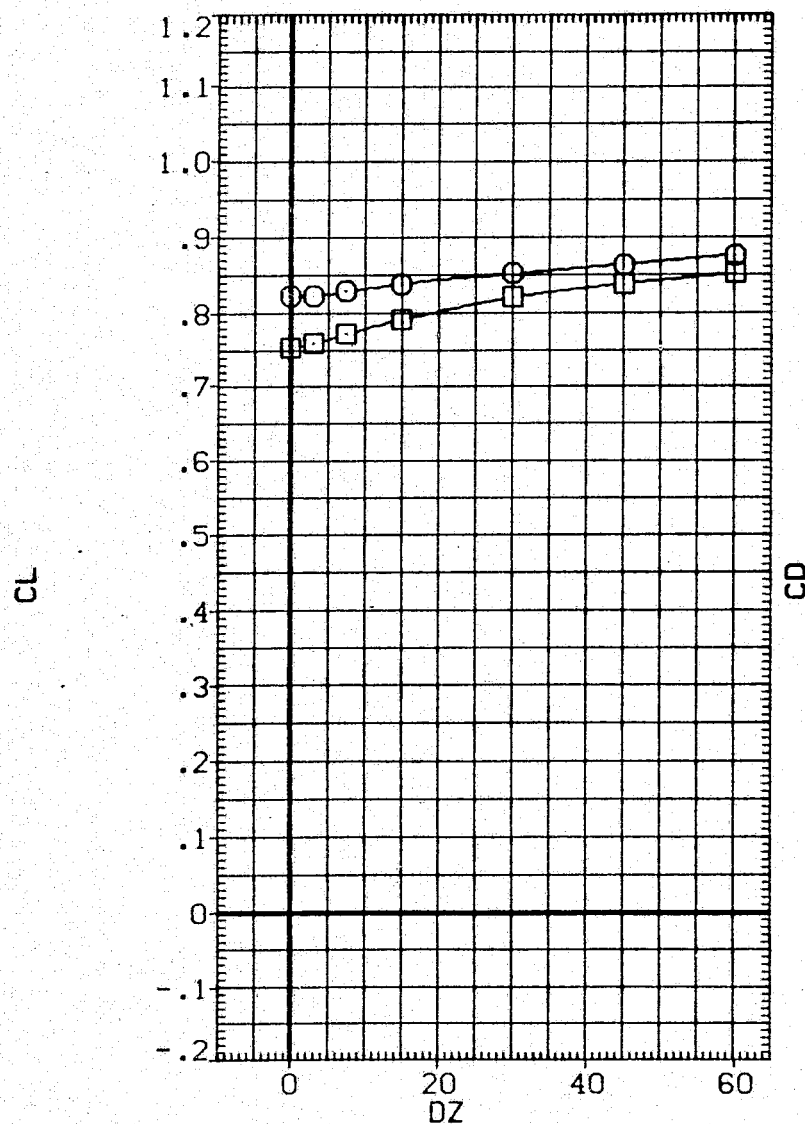


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	.000	DY	10.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

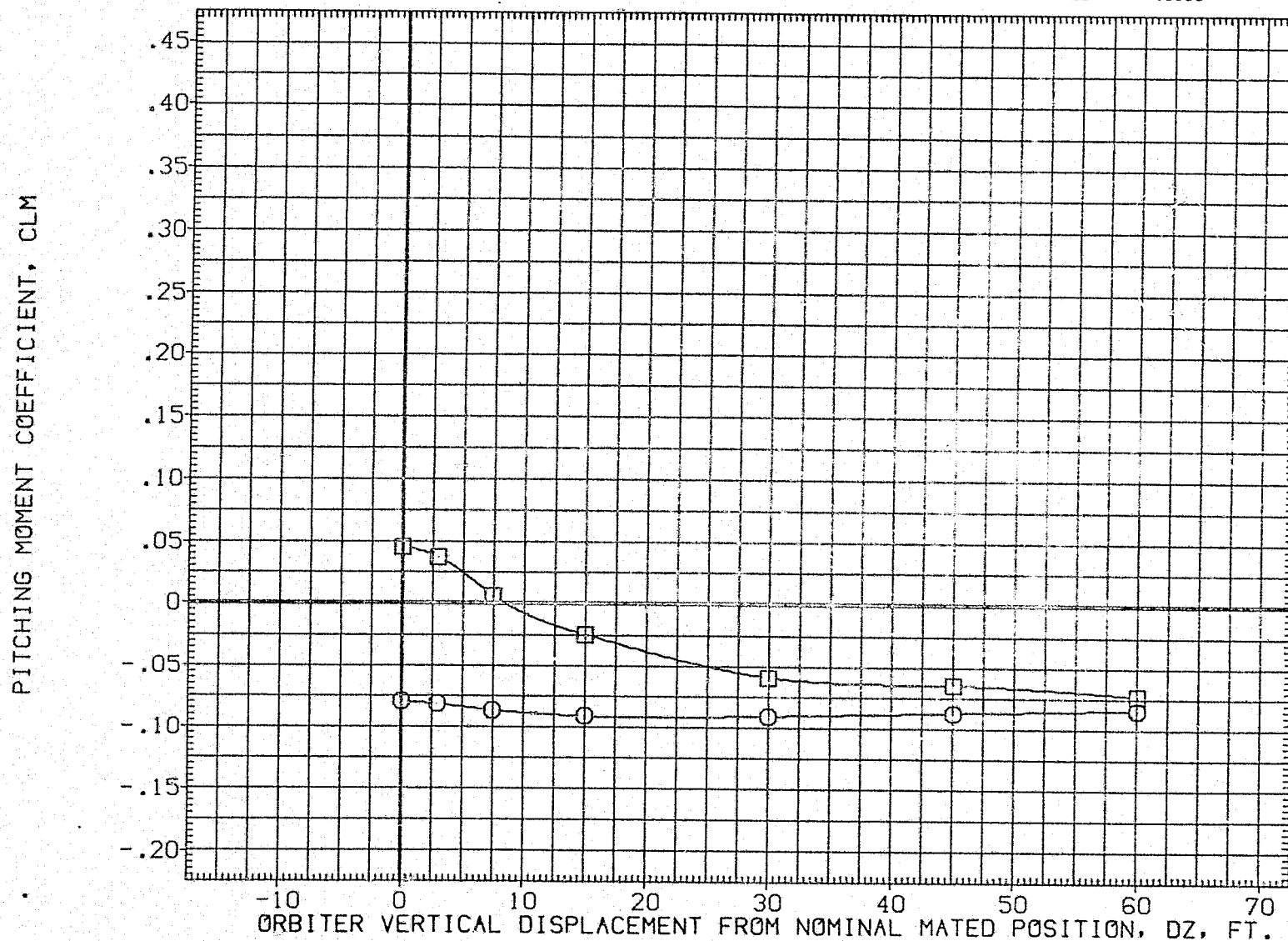


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN114)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	.000	DY	10.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

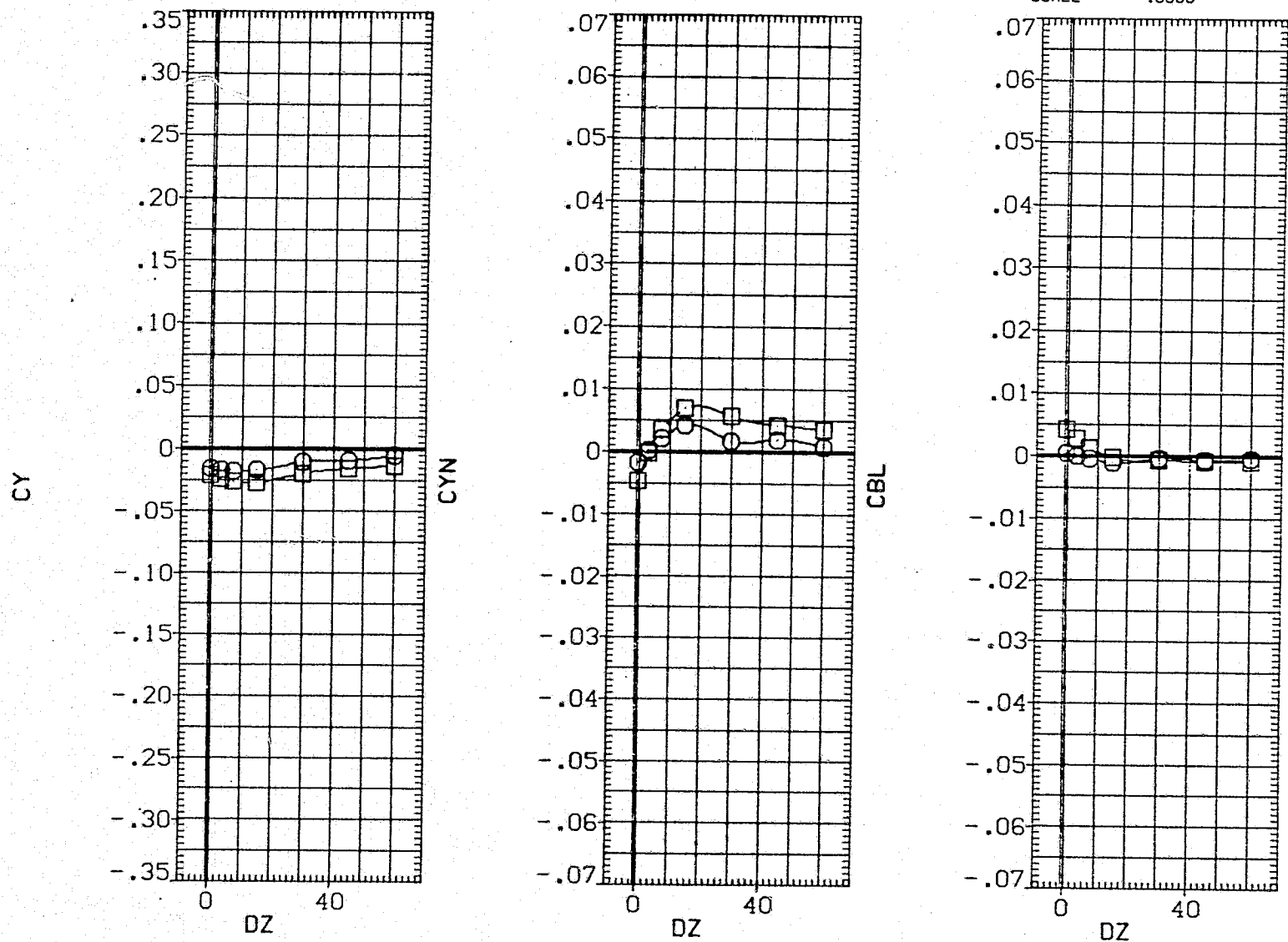


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN114)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	ELEVON	.000	3.000
□	14.000	PHI	5.000	.600
		BETAC	.000	-5.000
		DX	10.000	10.000
		ALPHAC	8.000	

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1739.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

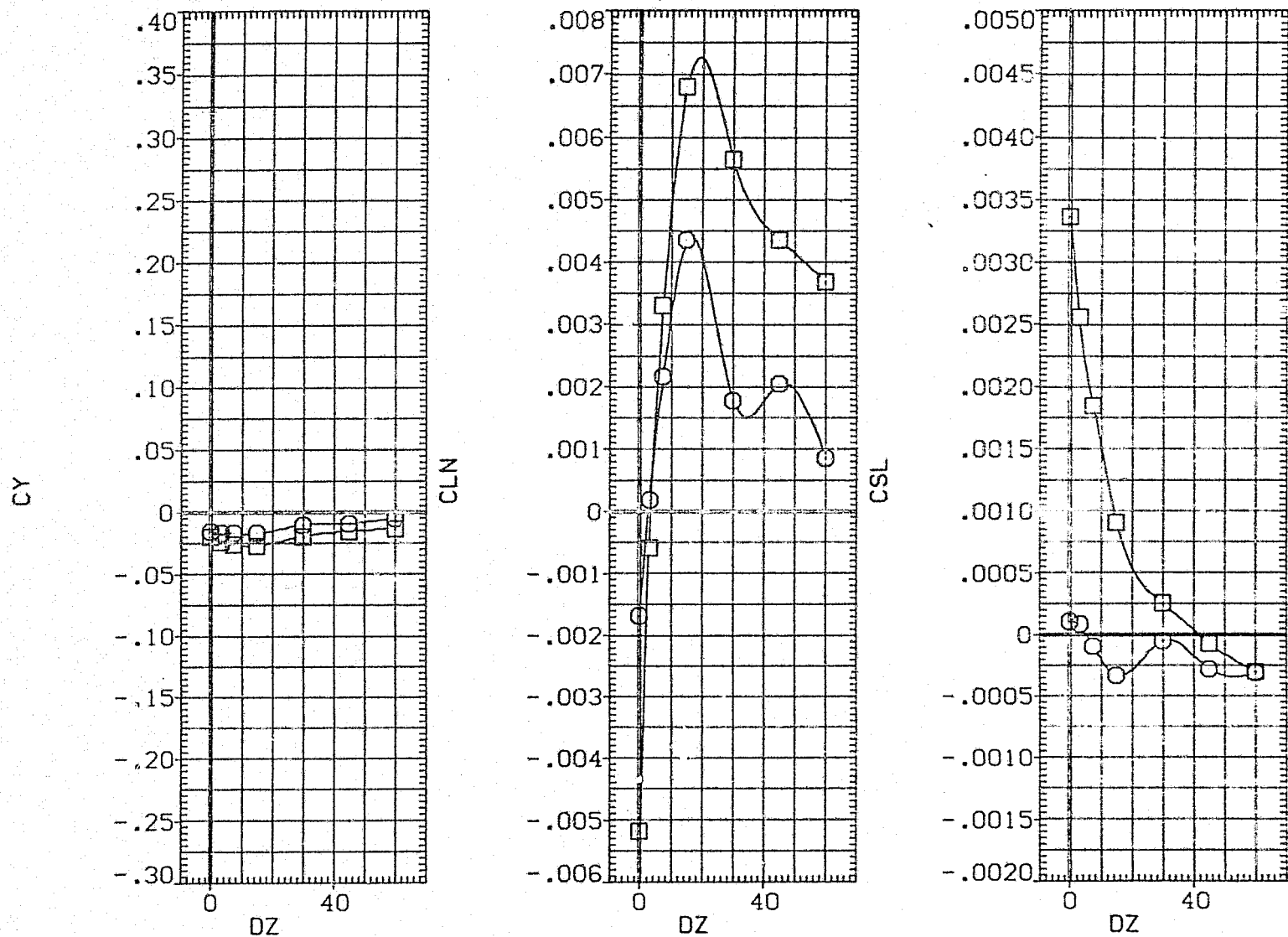


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 (747/1 01 S1) - (747/1)

D/S (114 - 035 (UGN114))

SYMBOL

○
□

ALPHA0

10.000
14.000ALPHAC
ELV-1B
ELEVON
PHI
DY

PARAMETRIC VALUES

8.000	BETAC	.000
.000	ELV-0B	3.000
5.000	MACH	.600
.000	DX	10.000
10.000	BETA0	-5.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

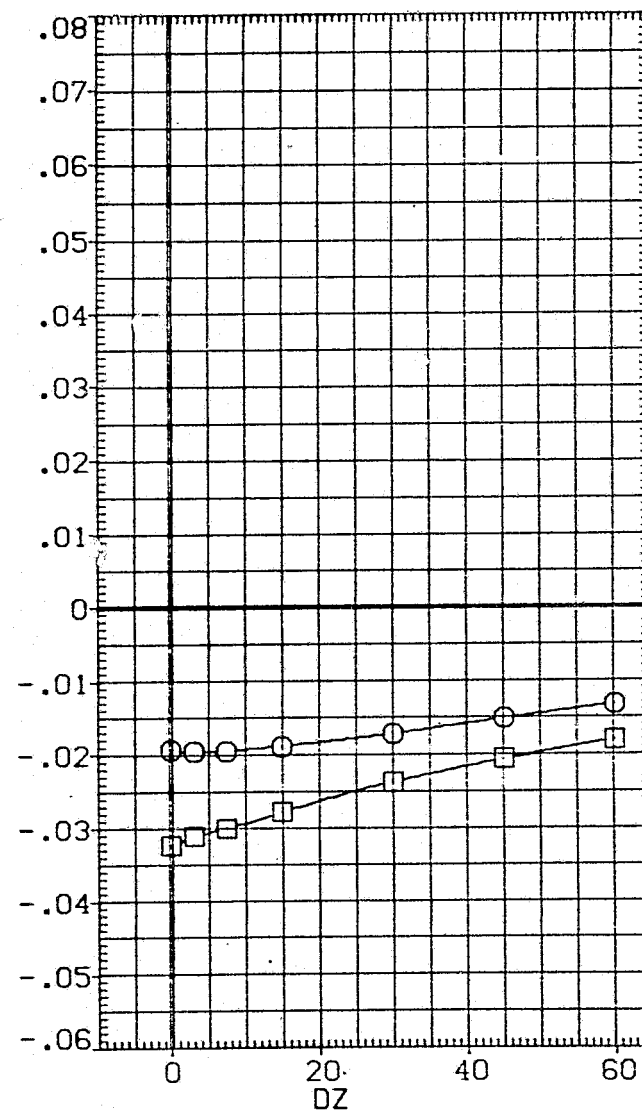
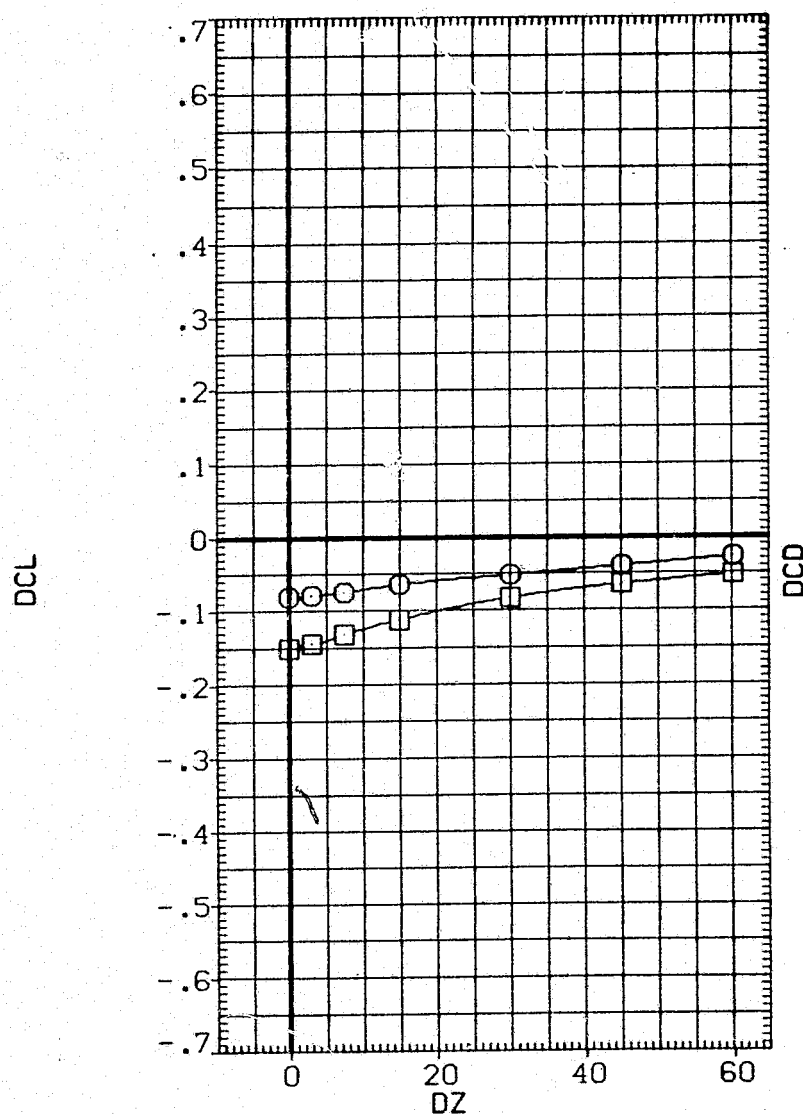


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

BETAC

ELV-0B

MACH

DX

BETA0

.000

3.000

.600

10.000

-5.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

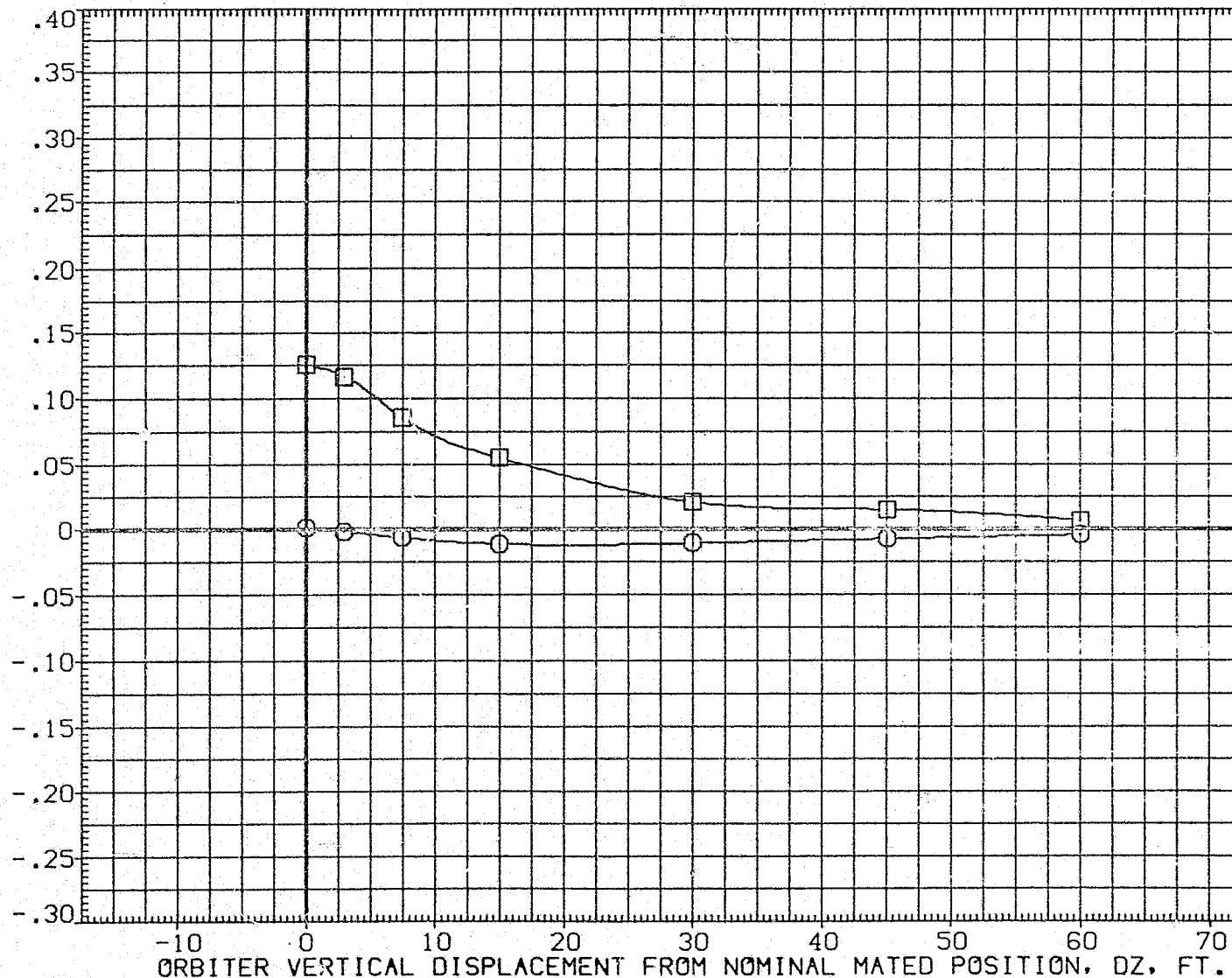


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC .000
□	14.000	ELV-18 .000 ELV-08 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETAD -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

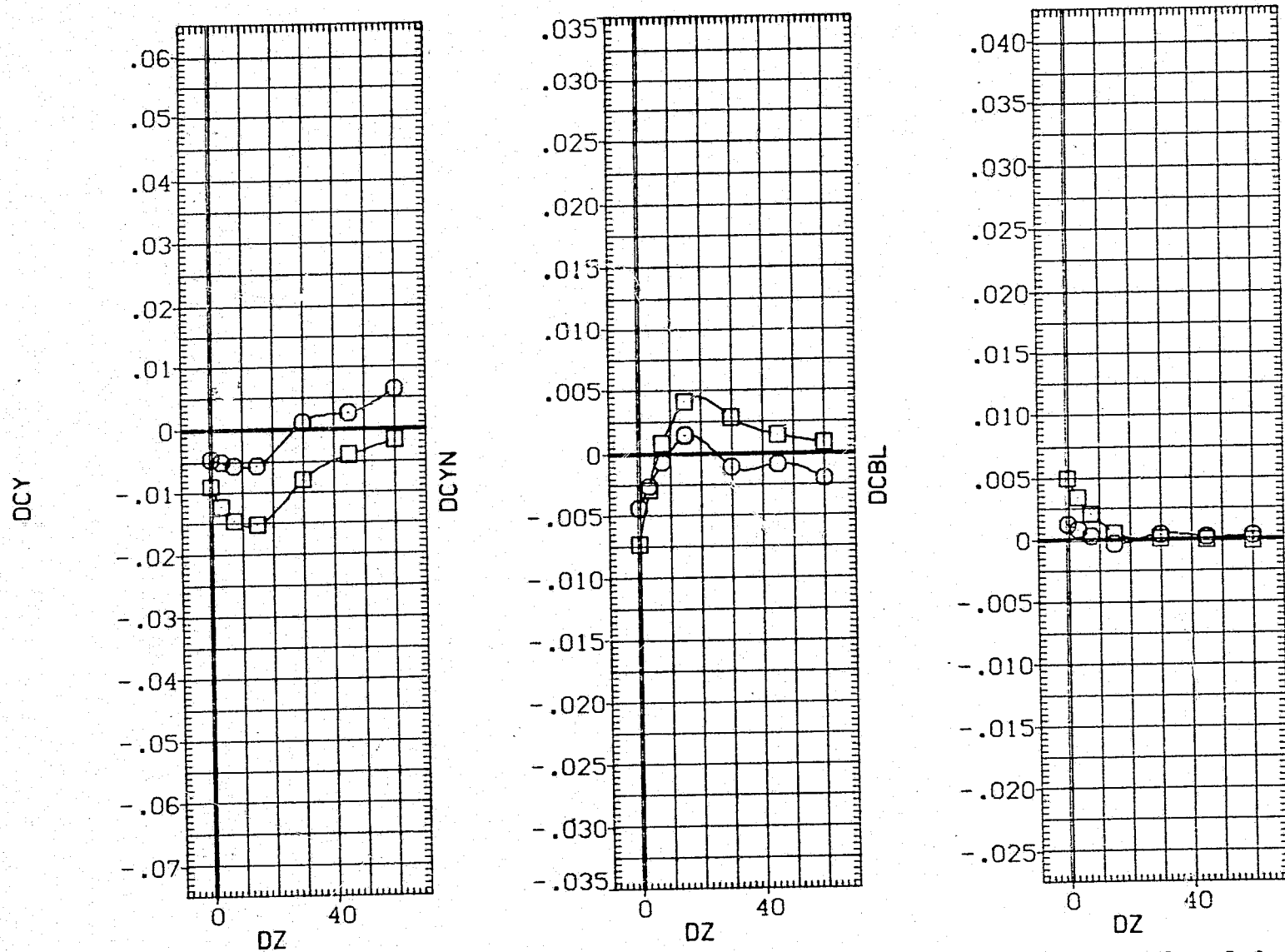


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

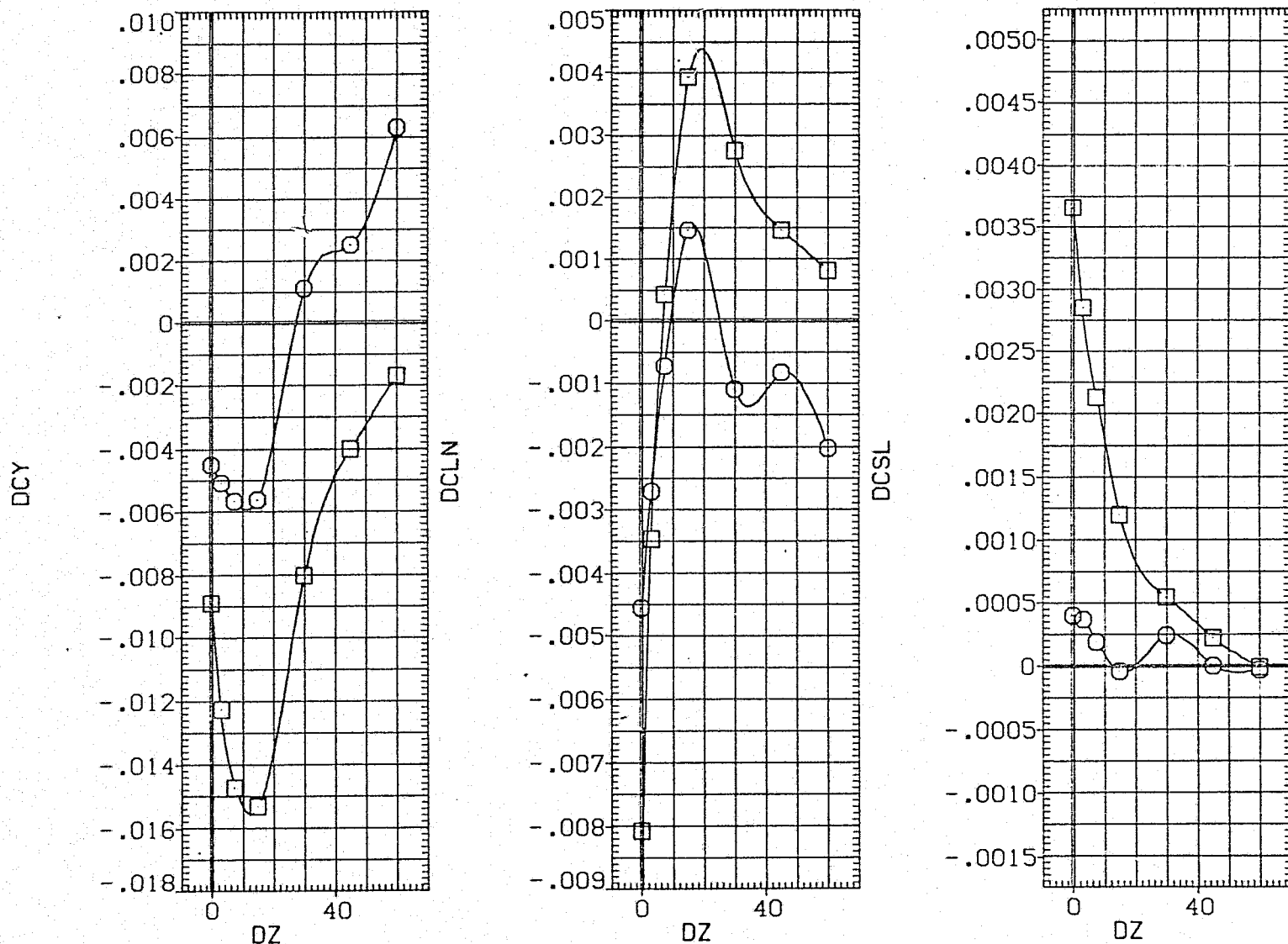


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES			
	10.000	14.000	ELV-1B	.000	ELV-0B	3.000
○			ELEVON	5.000	MACH	.600
□			PHI	.000	BETA0	-5.000
			BETAC	5.000	DY	.000
			DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

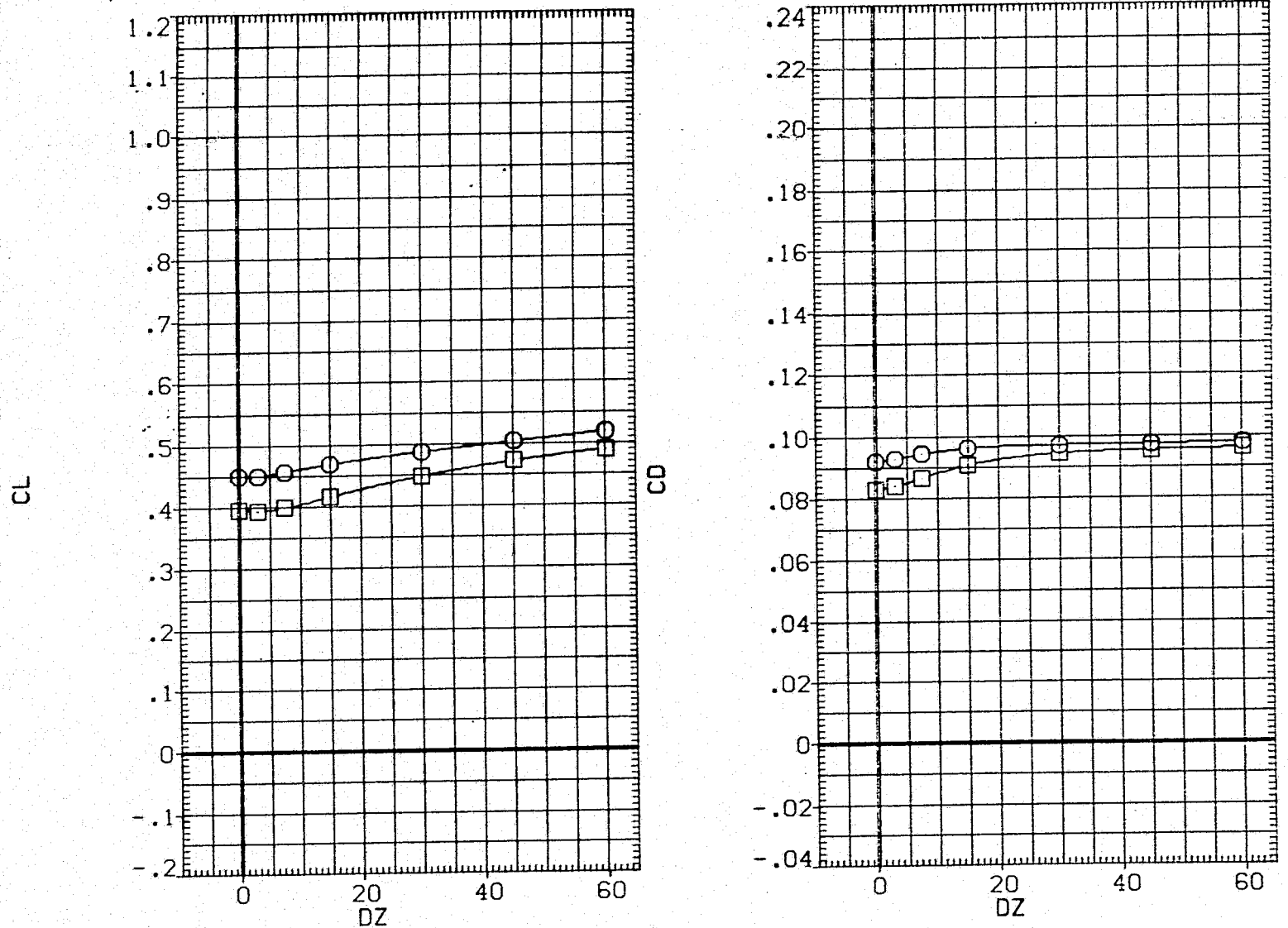


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (0° AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000
14.000

ELV-IB

ELEVON

PHI

BETAC

DX

PARAMETRIC VALUES

.000

5.000

.000

5.000

10.000

ELV-OB

MACH

BETAO

DY

ALPHAC

3.000

.600

-5.000

.000

4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

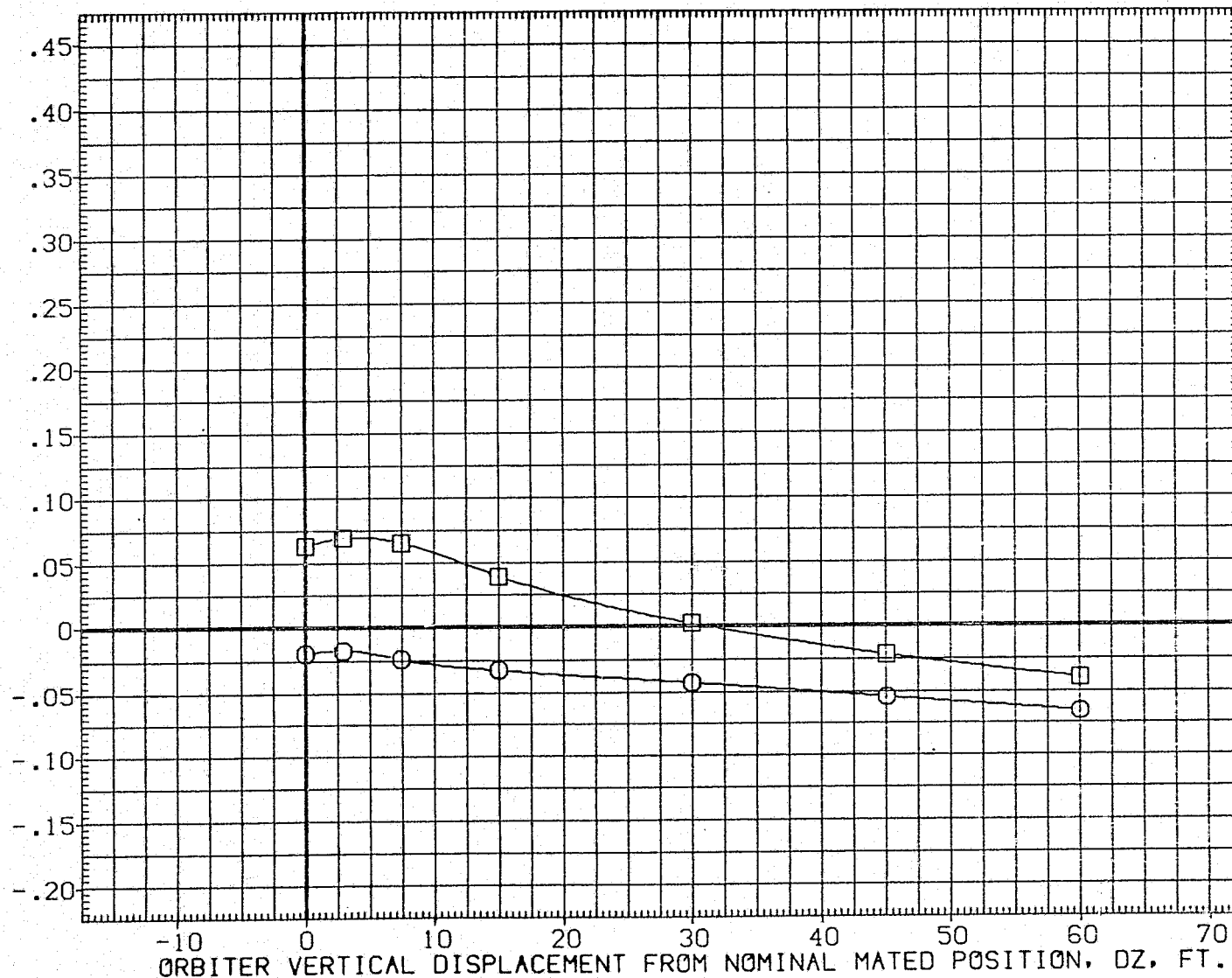


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN115)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ELV-IB	.000	ELV-OB	3.000
○	14.000	ELEVON	5.000	MACH	.600
□		PHI	.000	BETA0	-5.000
		BETAC	5.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	377.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

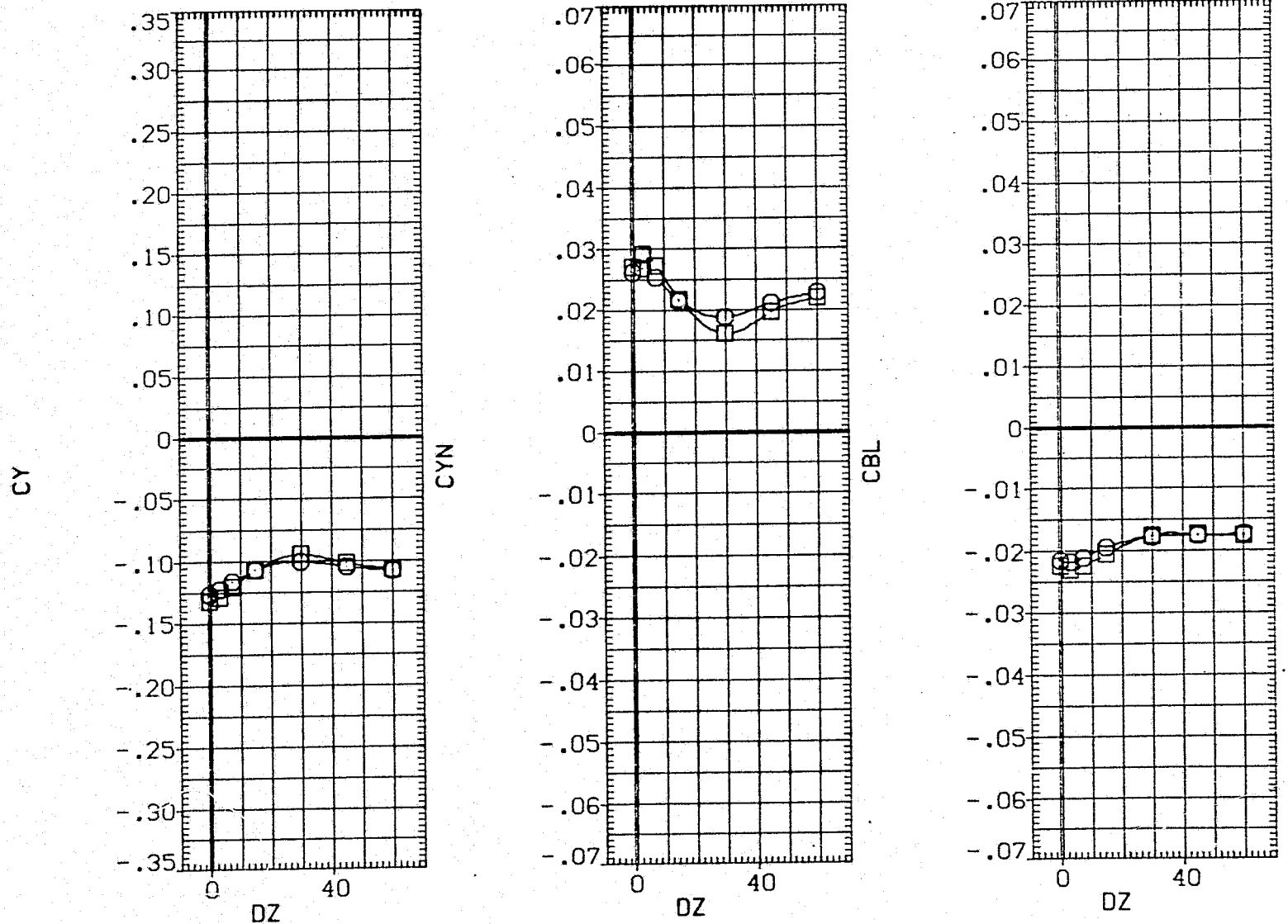


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	5.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

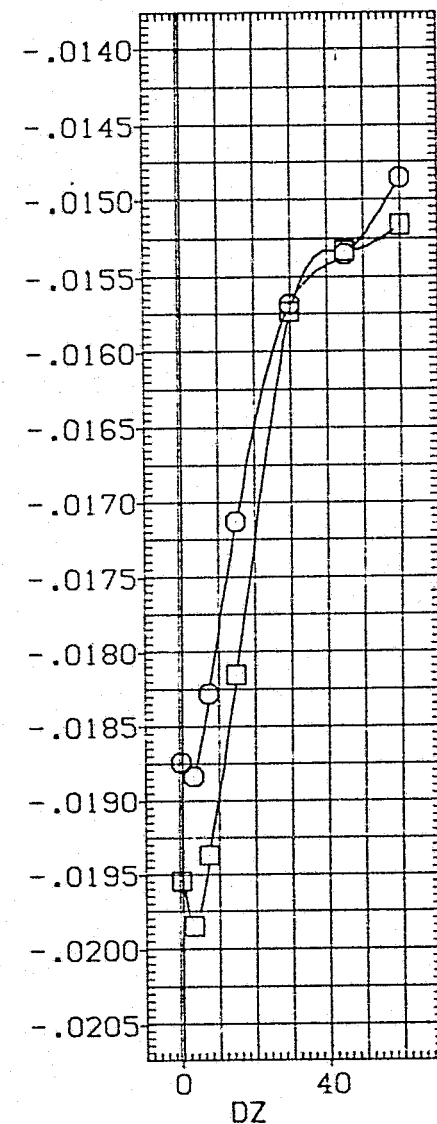
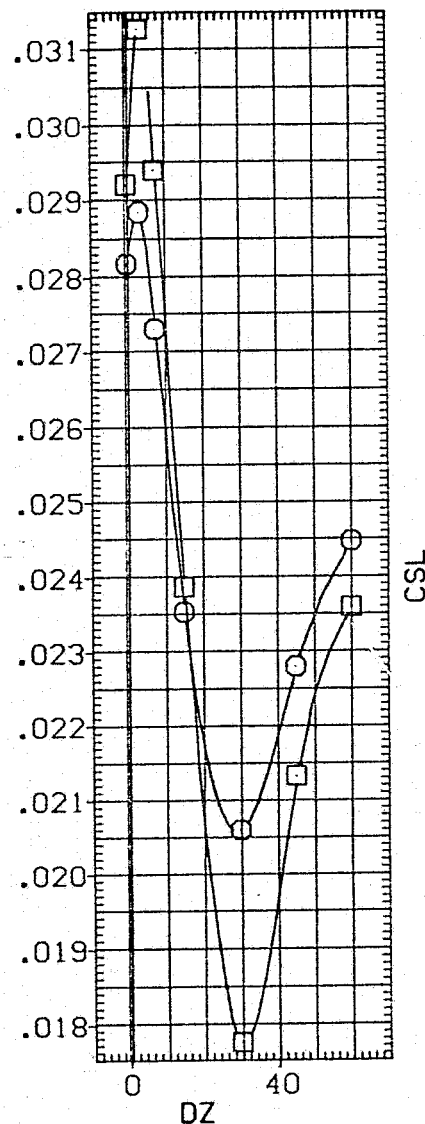
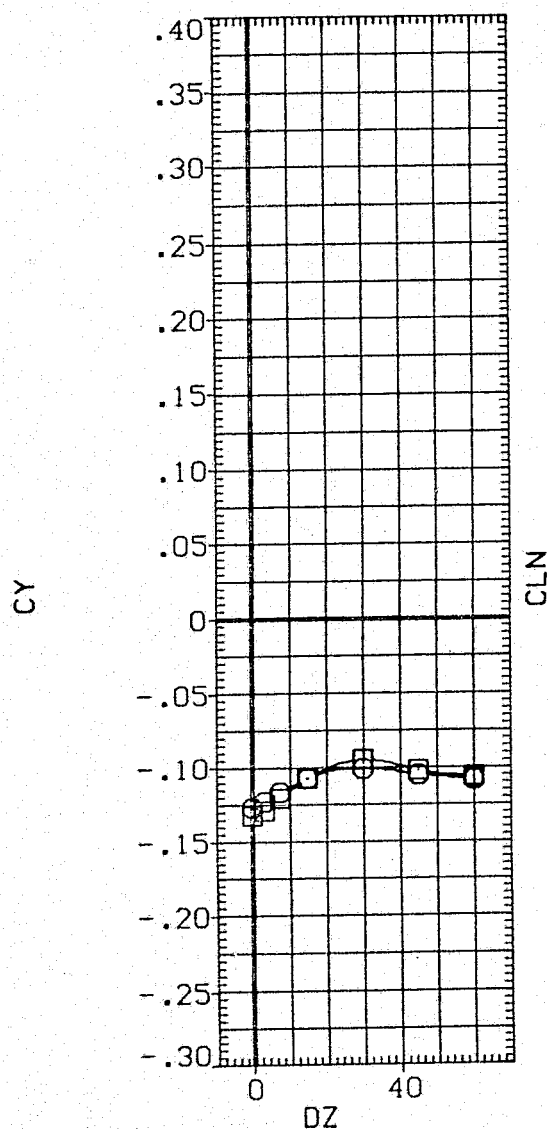


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC 5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY .000 BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

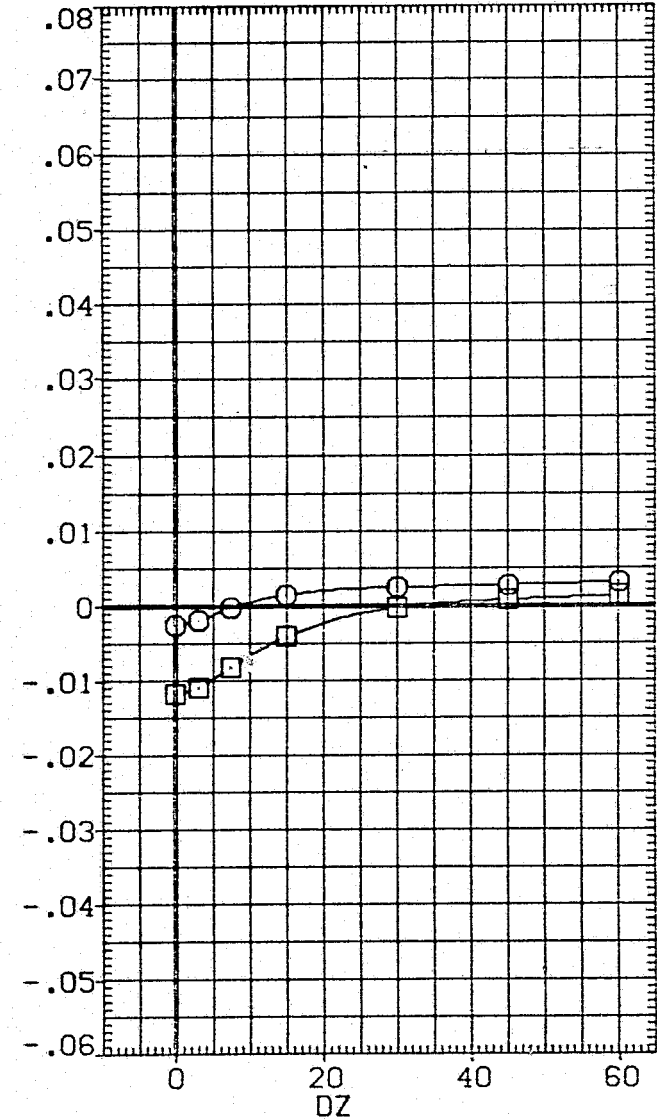
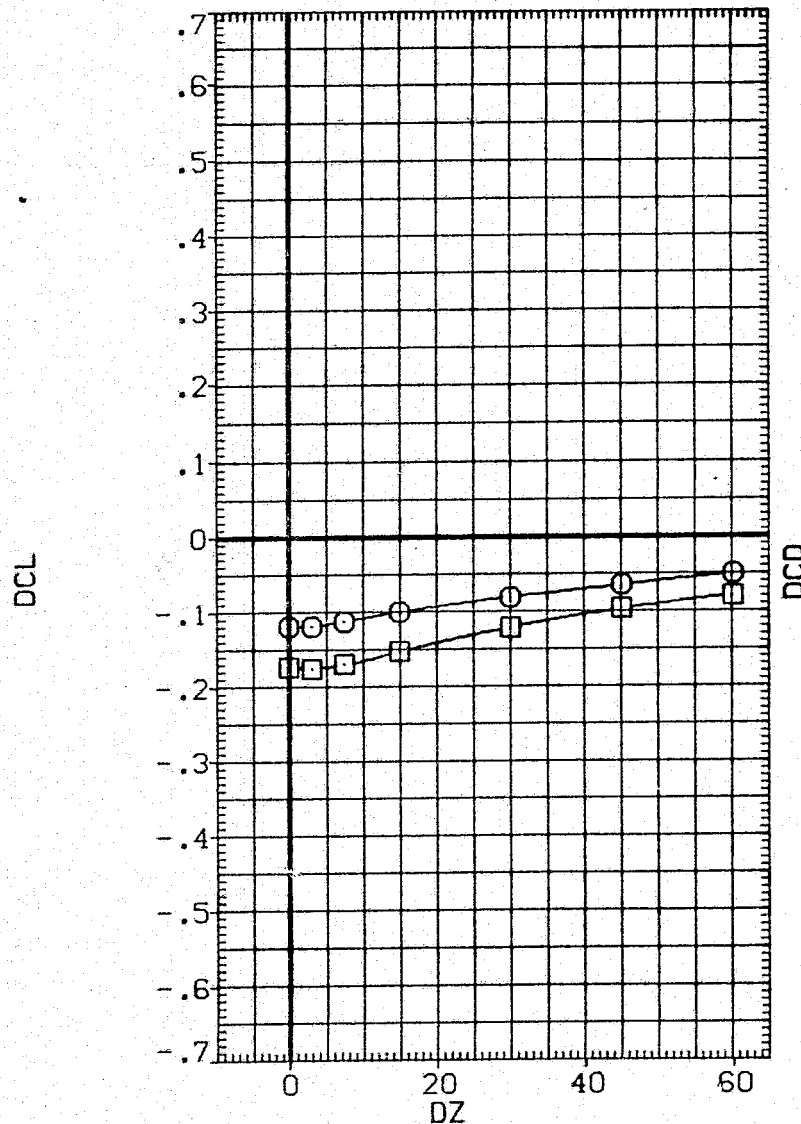


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

.000

.000

BETAC

ELV-OB

MACH

DX

BETA0

5.000

3.000

.600

10.000

-5.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCIM

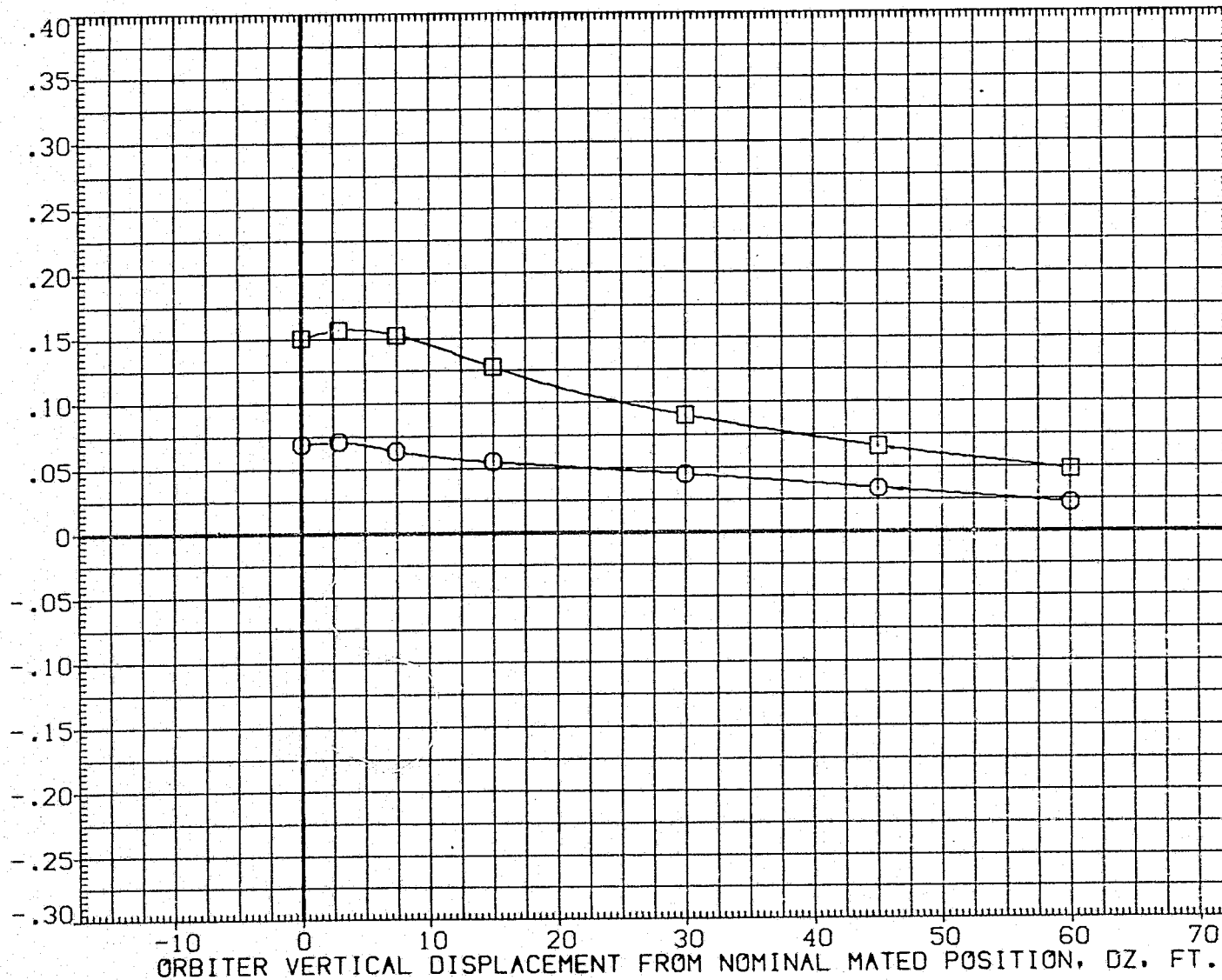


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES			
	10.000	14.000	ALPHAC	4.000	BETAC	5.000
			ELV-IB	.000	ELV-OB	3.000
			ELEVON	5.000	MACH	.600
			PHI	.000	DX	10.000
			DY	.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.9400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

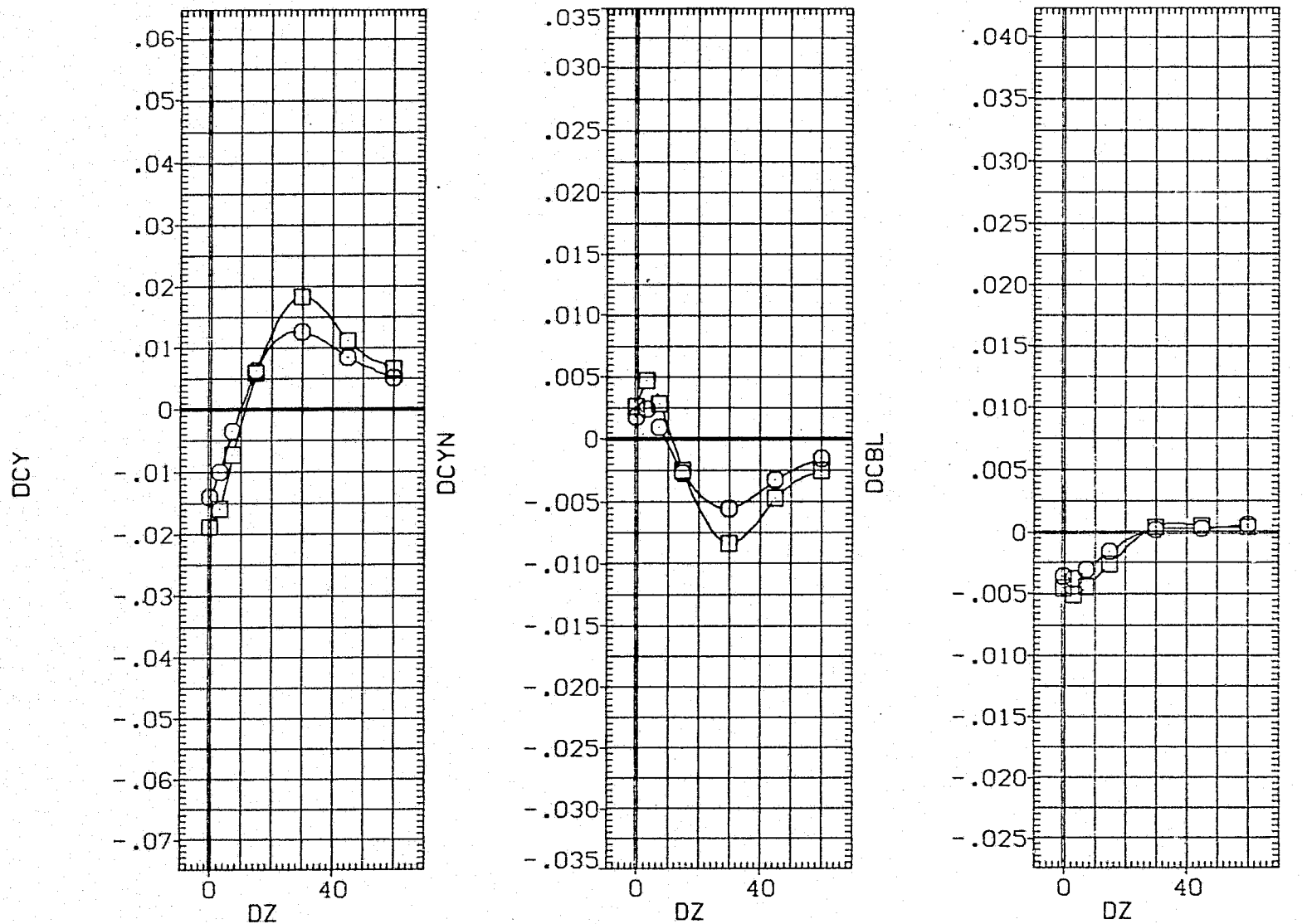


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

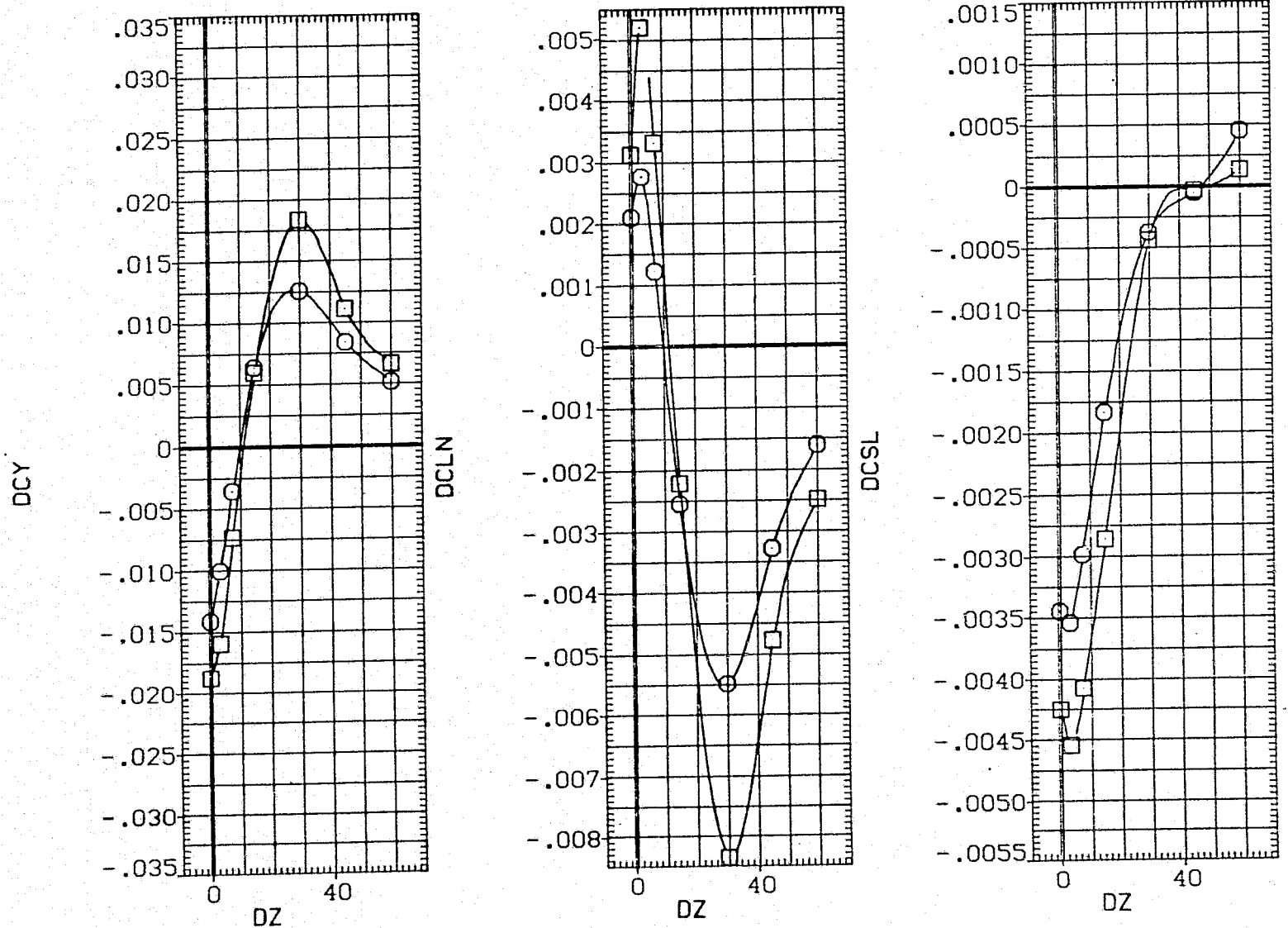


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	5.000	DY	.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

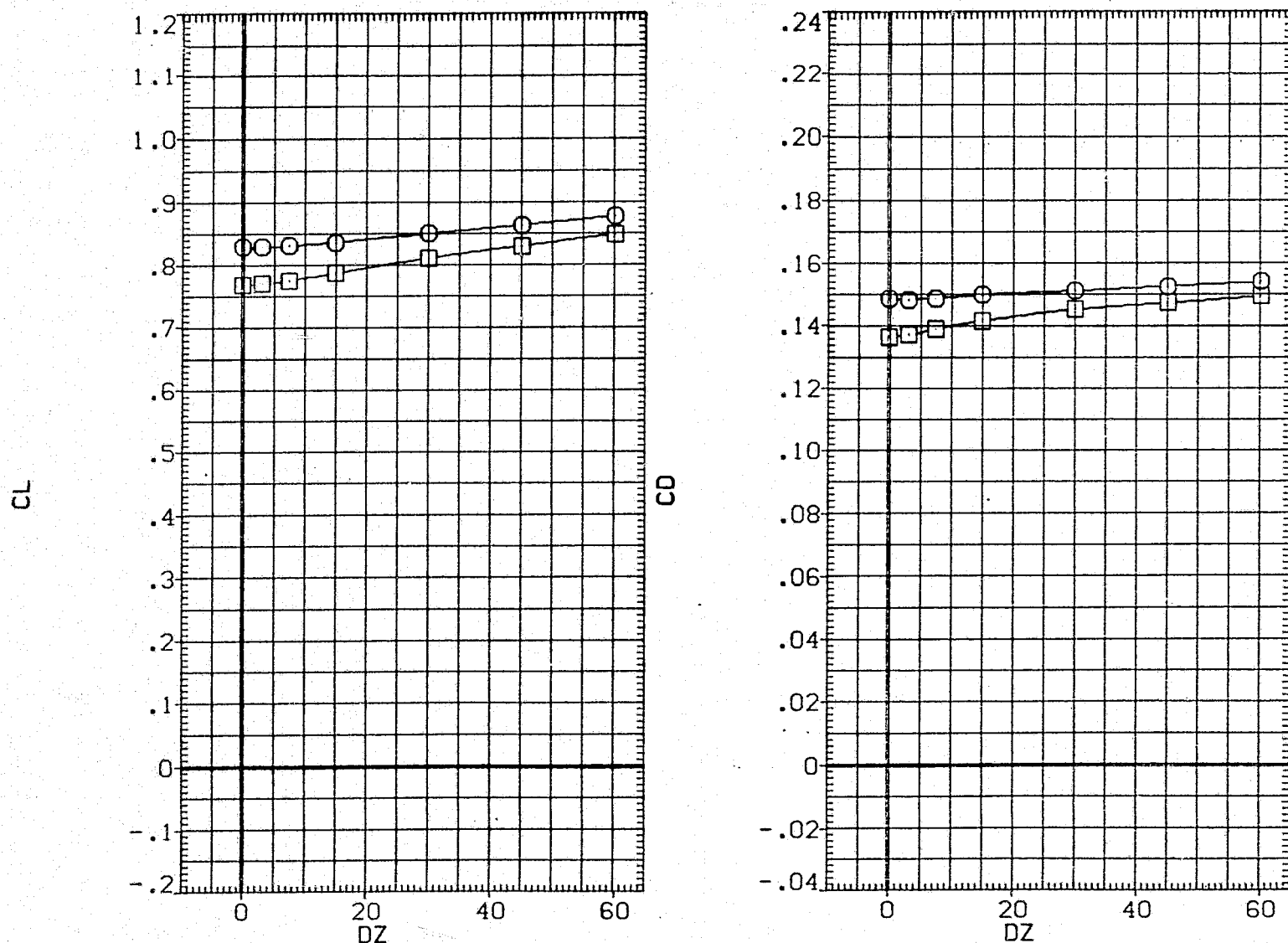


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

ALPHA0

PARAMETRIC VALUES

○
□10.000
14.000ELV-1B
ELEVON
PHI
BETAC
DX.000
5.000
.000
5.000
10.000ELV-0B
MACH
BETAO
DY
ALPHAC3.000
.600
-5.000
.000
8.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

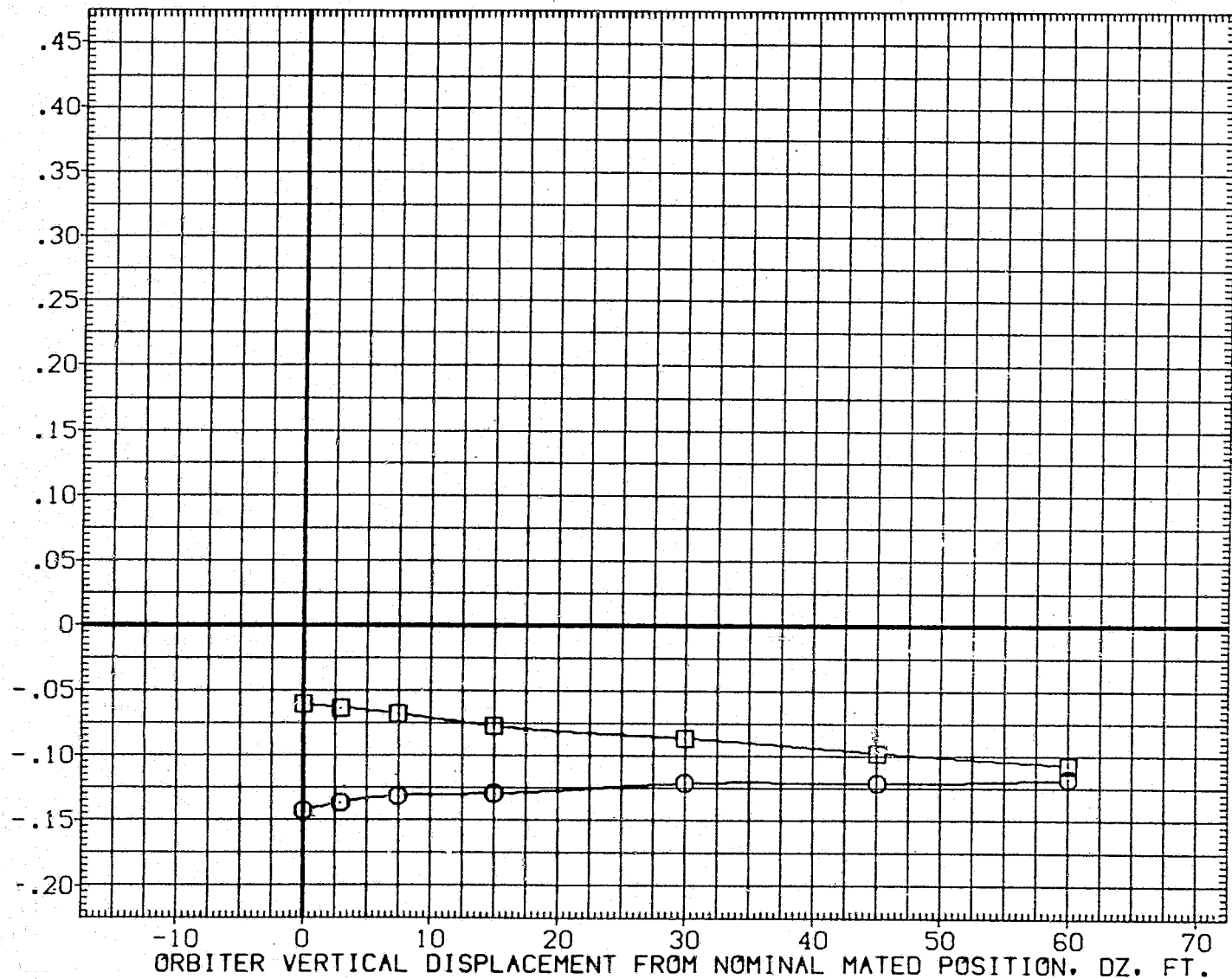


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-IB .000 ELV-OB 3.000
□	14.000	ELEVON 5.000 MACH .600
		PHI .000 BETA0 -5.000
		BETAC 5.000 DY .000
		DX 10.000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

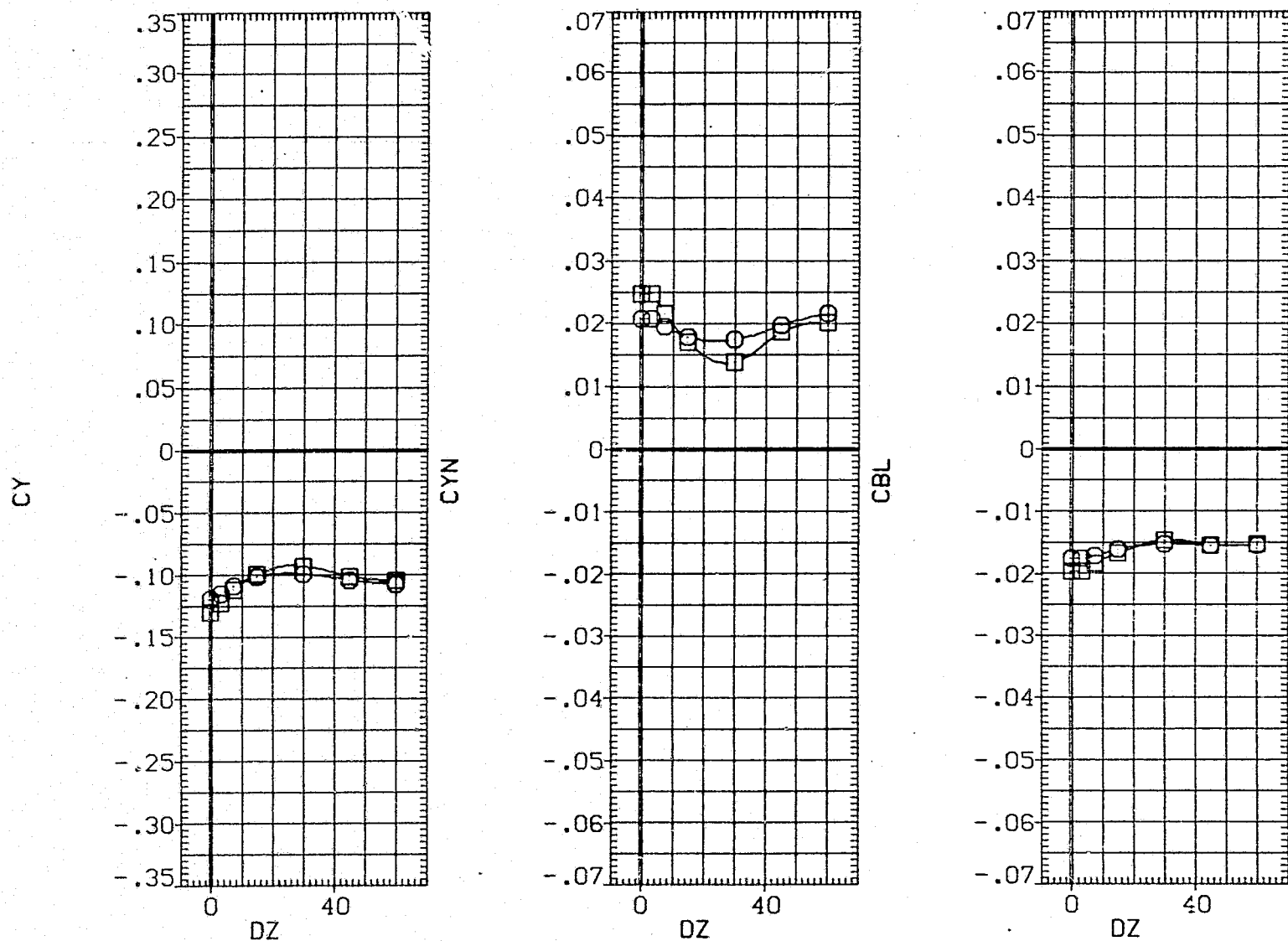


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		PHI .000 BETA0 -5.000
		BETAC 5.000 DY .000
		DX 10.000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

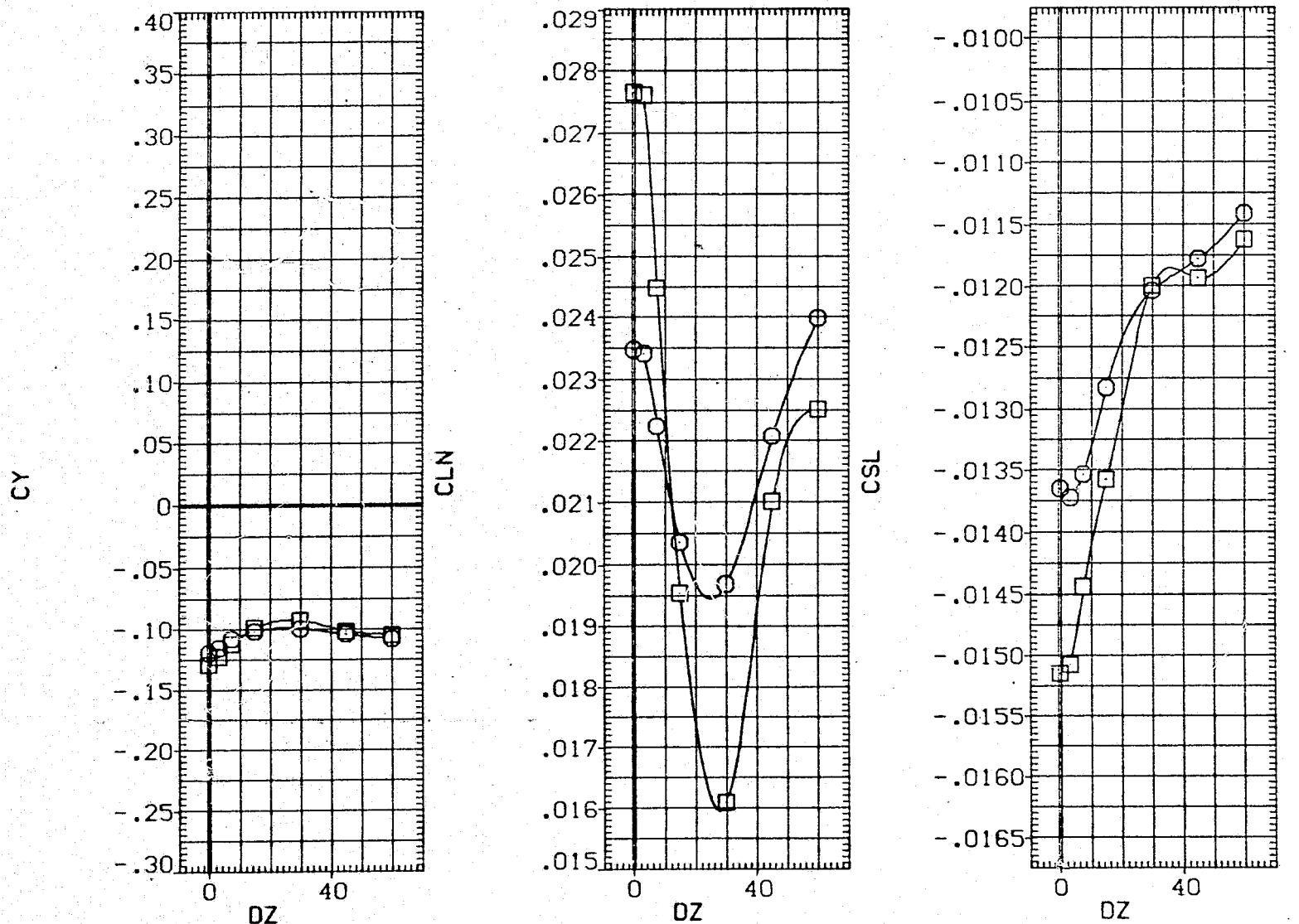


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

.000

.000

BETAC

ELV-0B

MACH

DX

BETA0

5.000

3.000

.600

10.000

-5.000

REFERENCE INFORMATION

SREF

LREF

BREF

XMRP

YMRP

ZMRP

SCALE

5500.0000

327.7800

2348.0400

1339.9000

.0000

190.8000

.0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

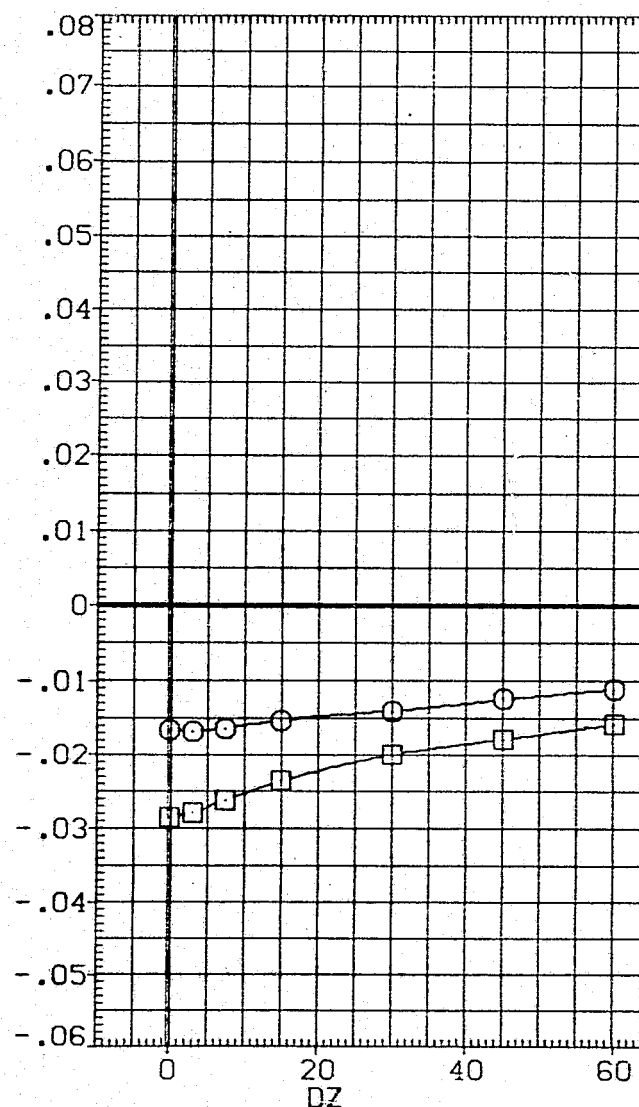
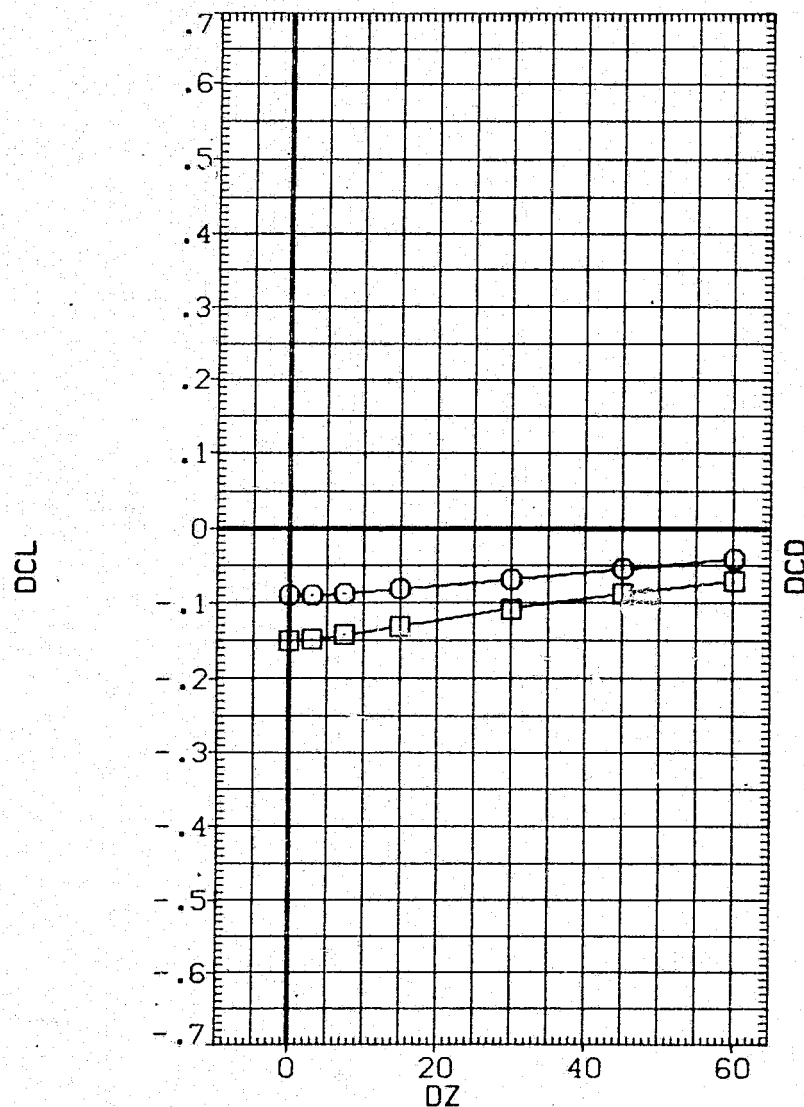


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES				REFERENCE INFORMATION		
○	10.000	ALPHAC	8.000	BETAC	5.000	SREF	5500.0000	50.FT.
□	14.000	ELV-1B	.000	ELV-0B	3.000	LREF	327.7800	IN.
		ELEVON	5.000	MACH	.600	BREF	2348.0400	IN.
		PHI	.000	DX	10.000	XMRP	1339.9000	IN.XC
		DY	.000	BETAC	-5.000	YMRP	.0000	IN.YC
						ZMRP	190.8000	IN.ZC
						SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCIM

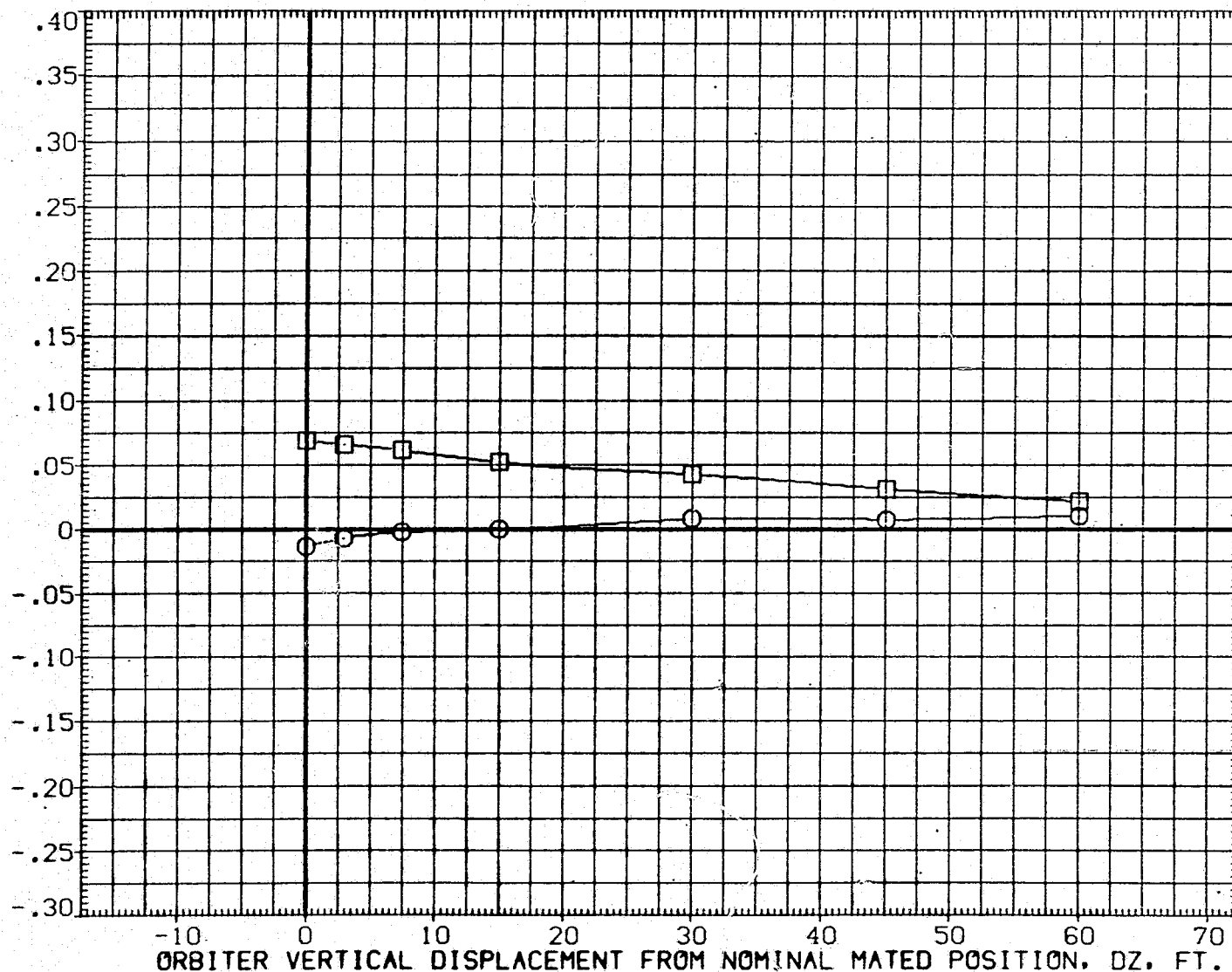


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	8.000	ELV-1B	5.000
□	14.000	.000	ELV-0B	3.000
		5.000	MACH	.600
		.000	DX	10.000
		.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.3000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

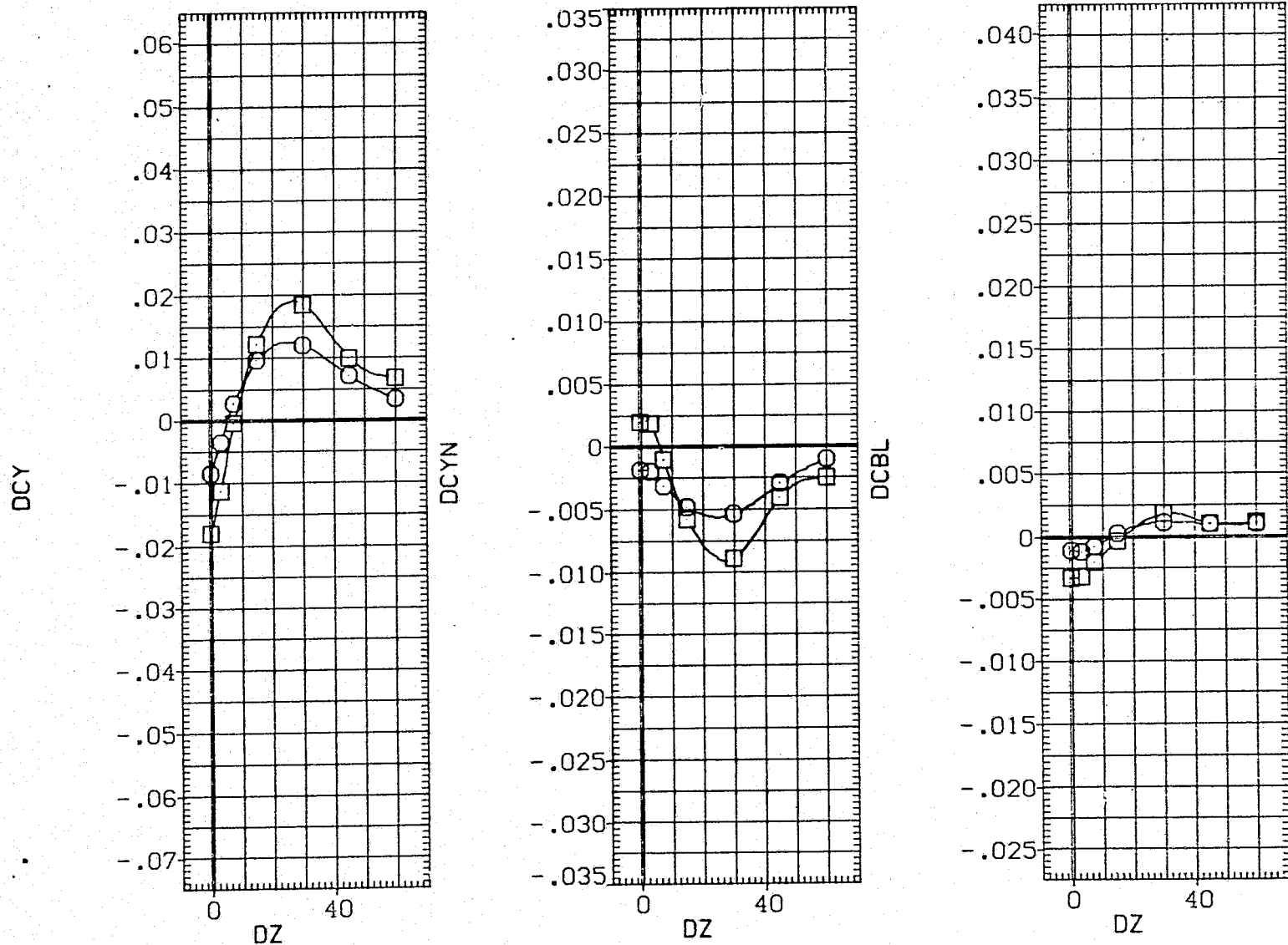


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	5.000
□	14.000	ELV-18	.000	ELV-08	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

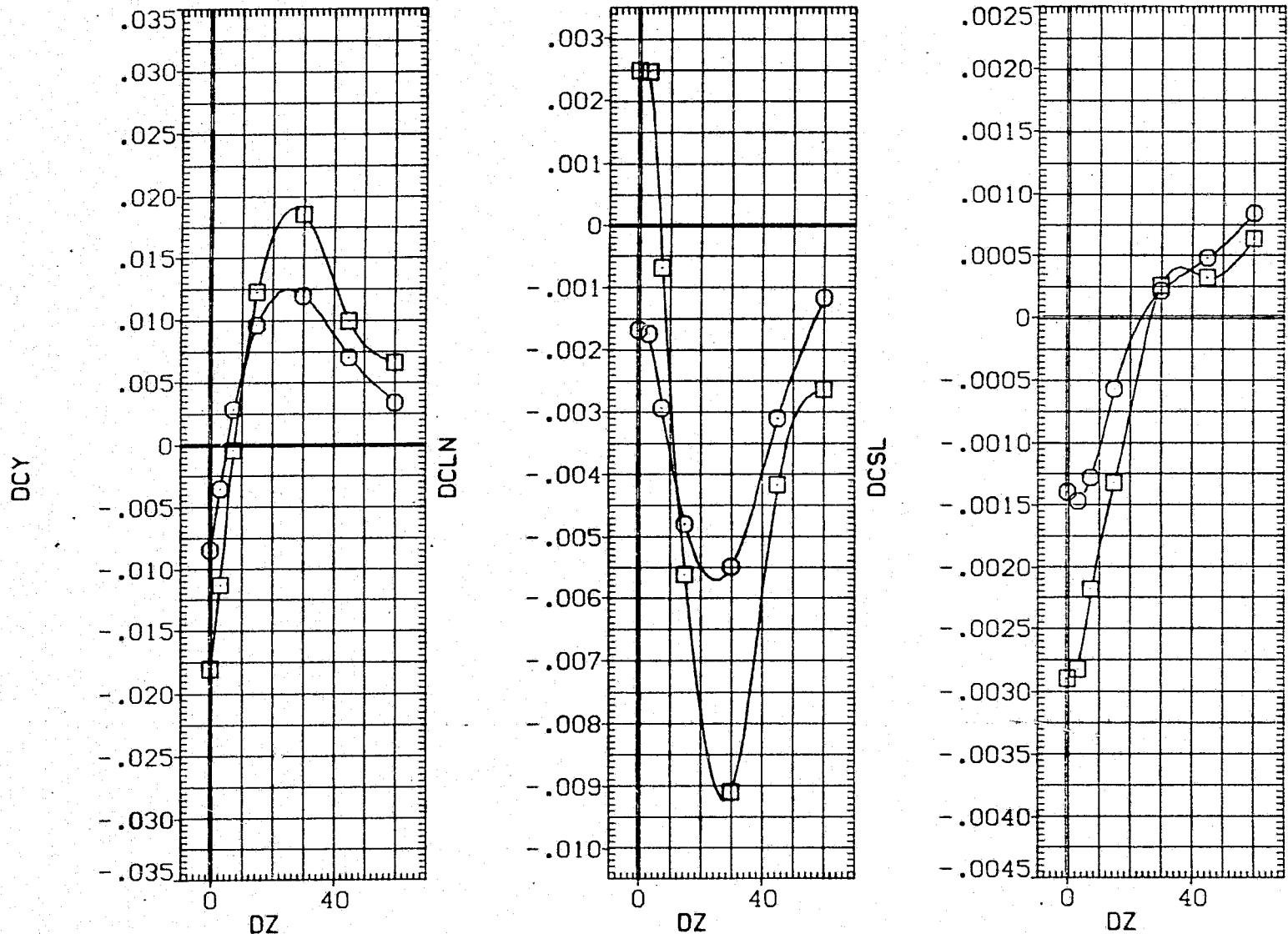


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	5.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

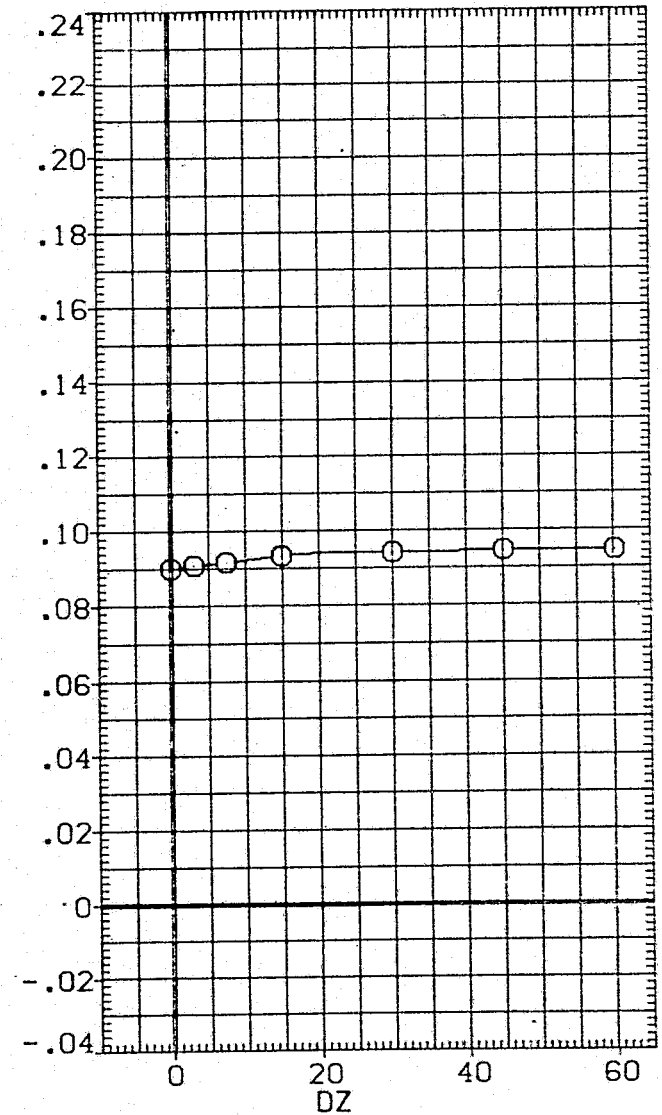
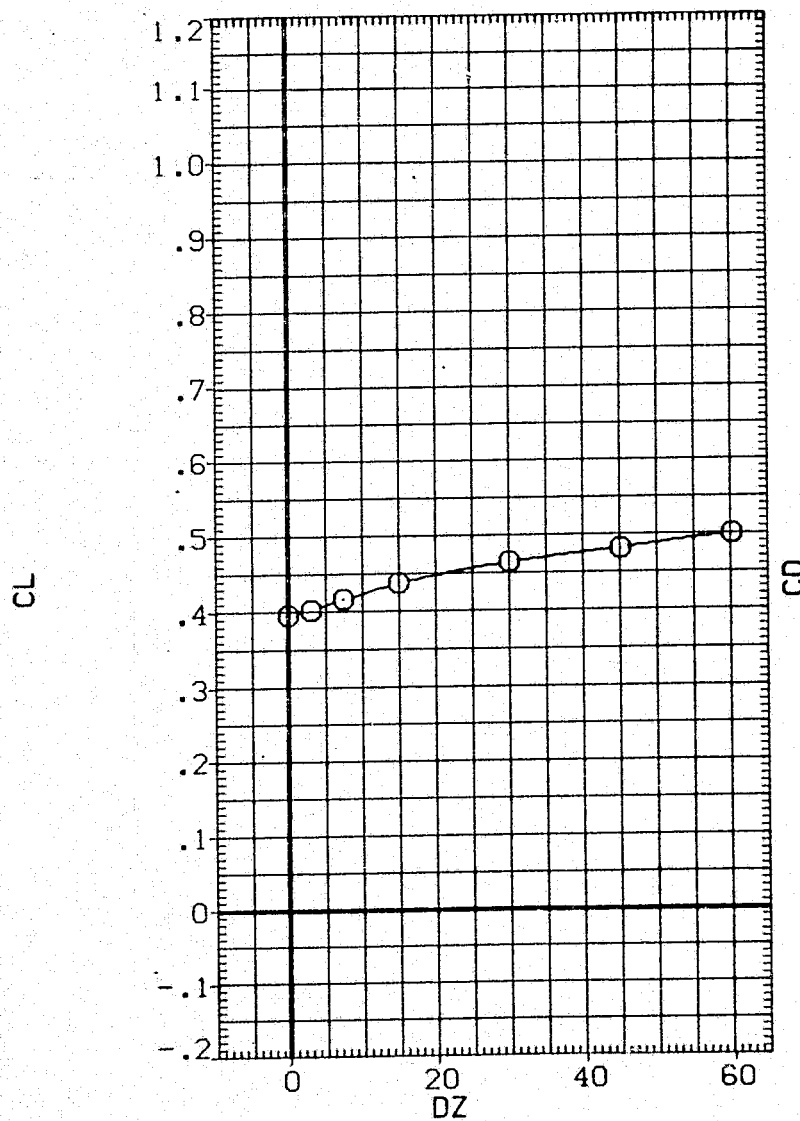


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES				REFERENCE INFORMATION		
○	10.000	ELV-1B	.000	ELV-0B	3.000	SREF	5500.0000	SQ.FT.
		ELEVON	5.000	MACH	.600	LREF	327.7800	IN.
		PHI	.000	BETA0	-5.000	BREF	2348.0400	IN.
		BETAC	5.000	DY	10.000	XMRP	1339.9000	IN.XC
		DX	.000	ALPHAC	4.000	YMRP	.0000	IN.YC
						ZMRP	190.8000	IN.ZC
						SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

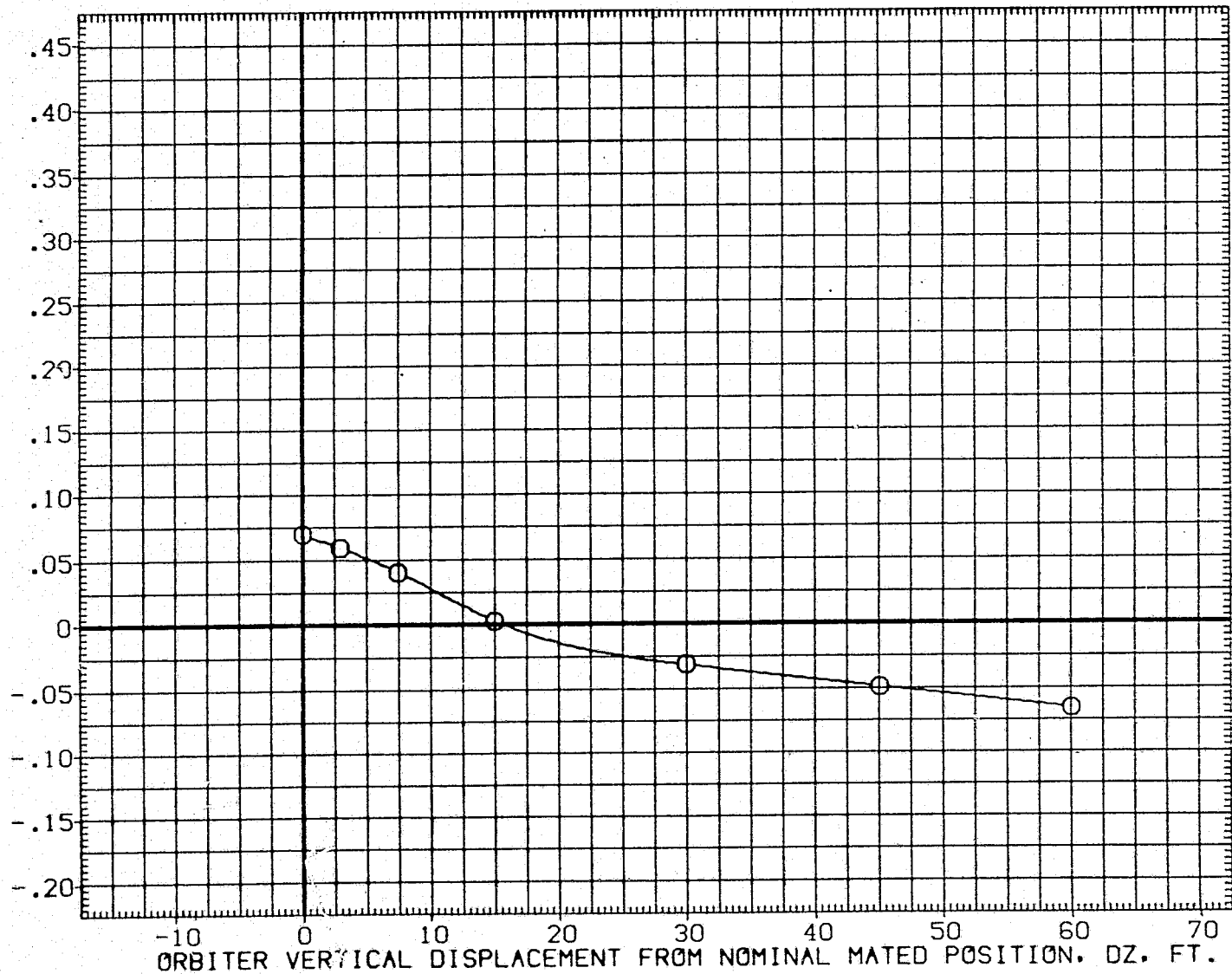


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	5.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SD.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

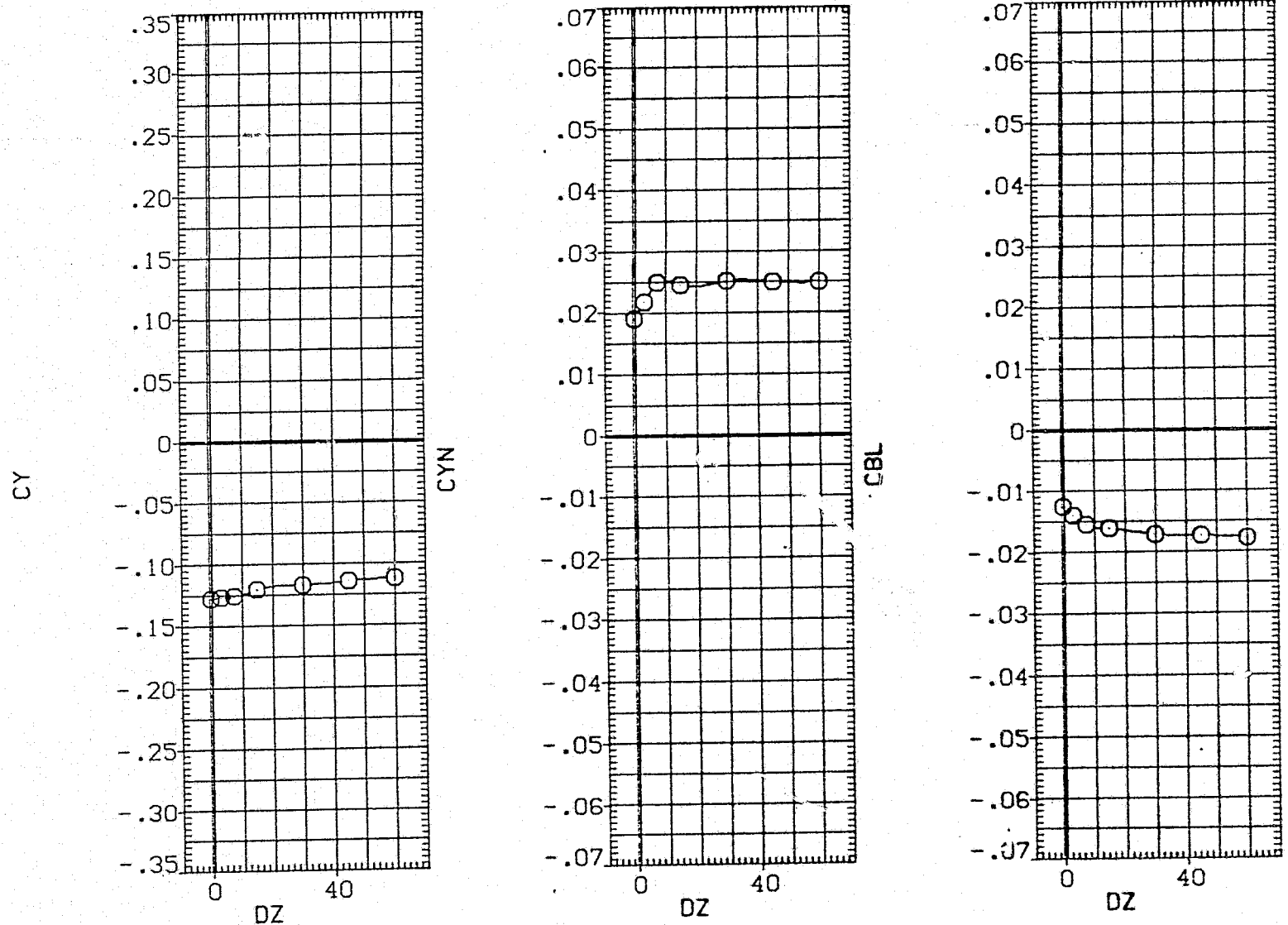


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI .000 BETA0 -5.000
		BETAC 5.000 DY 10.000
		DX .000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

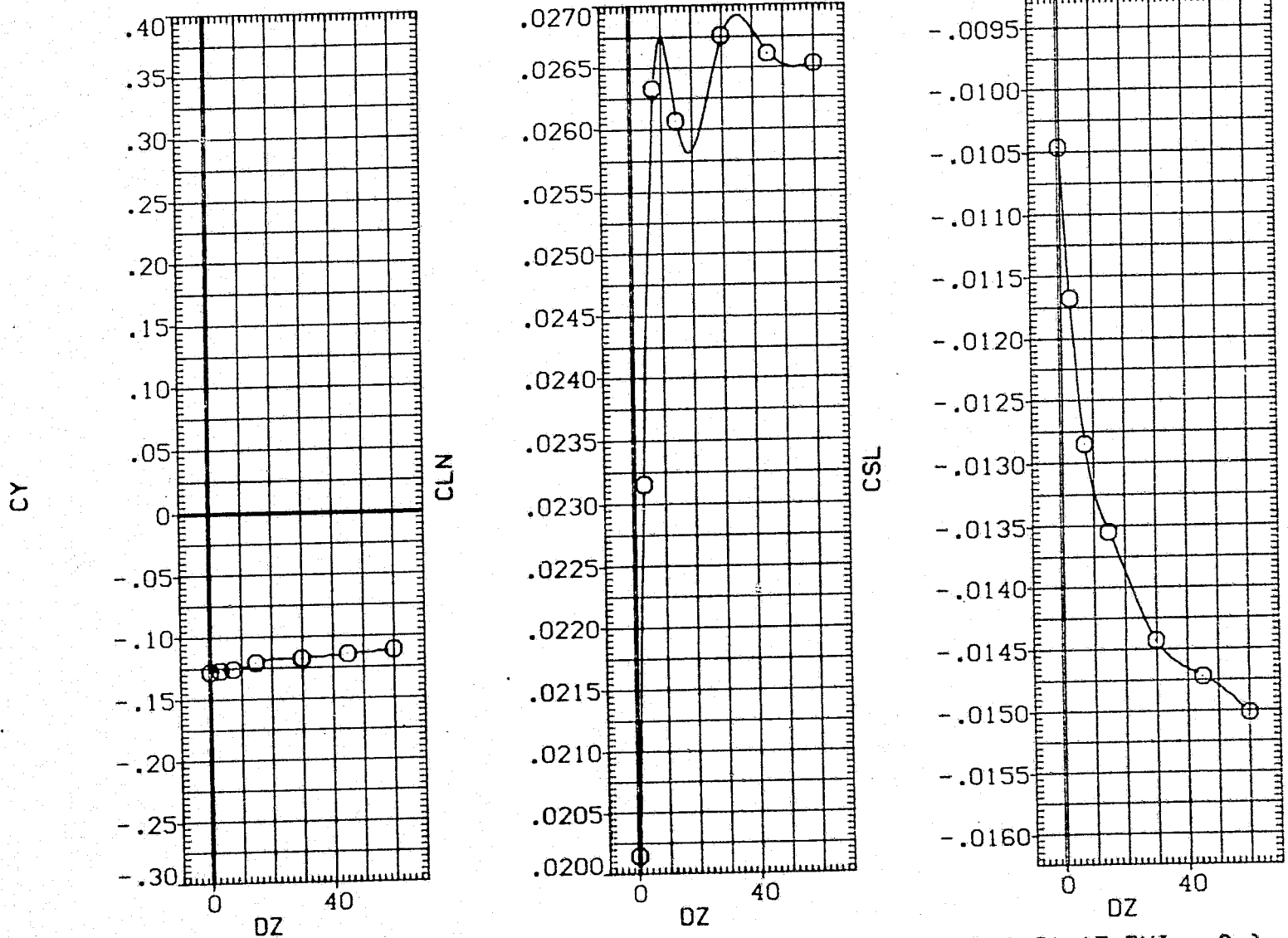


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	5.000
		ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

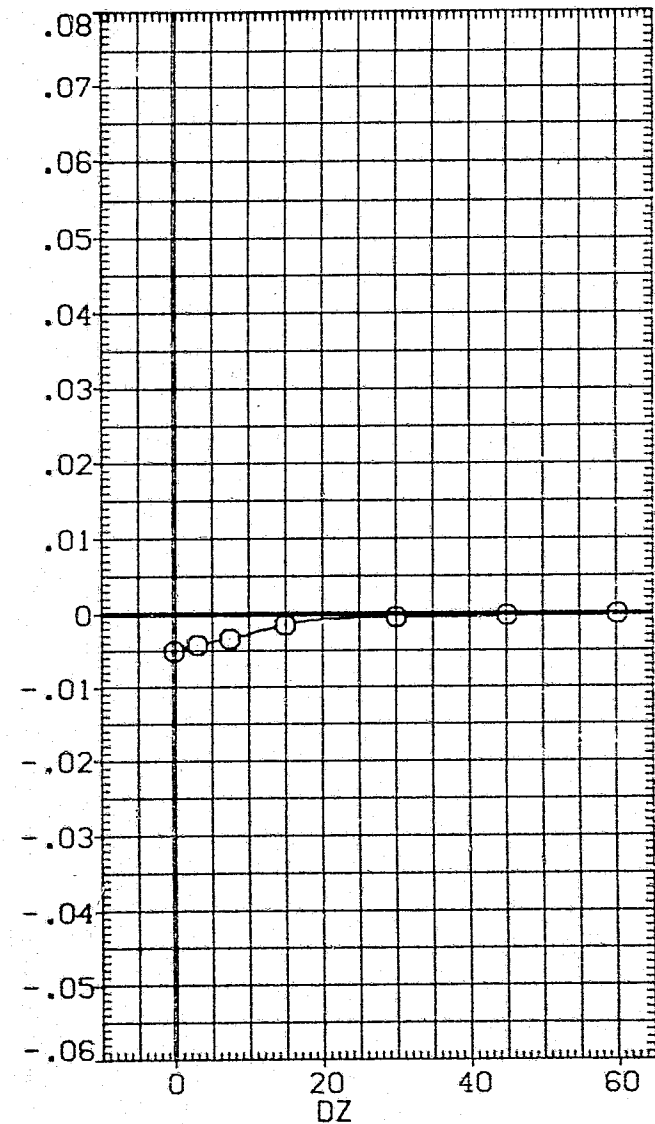
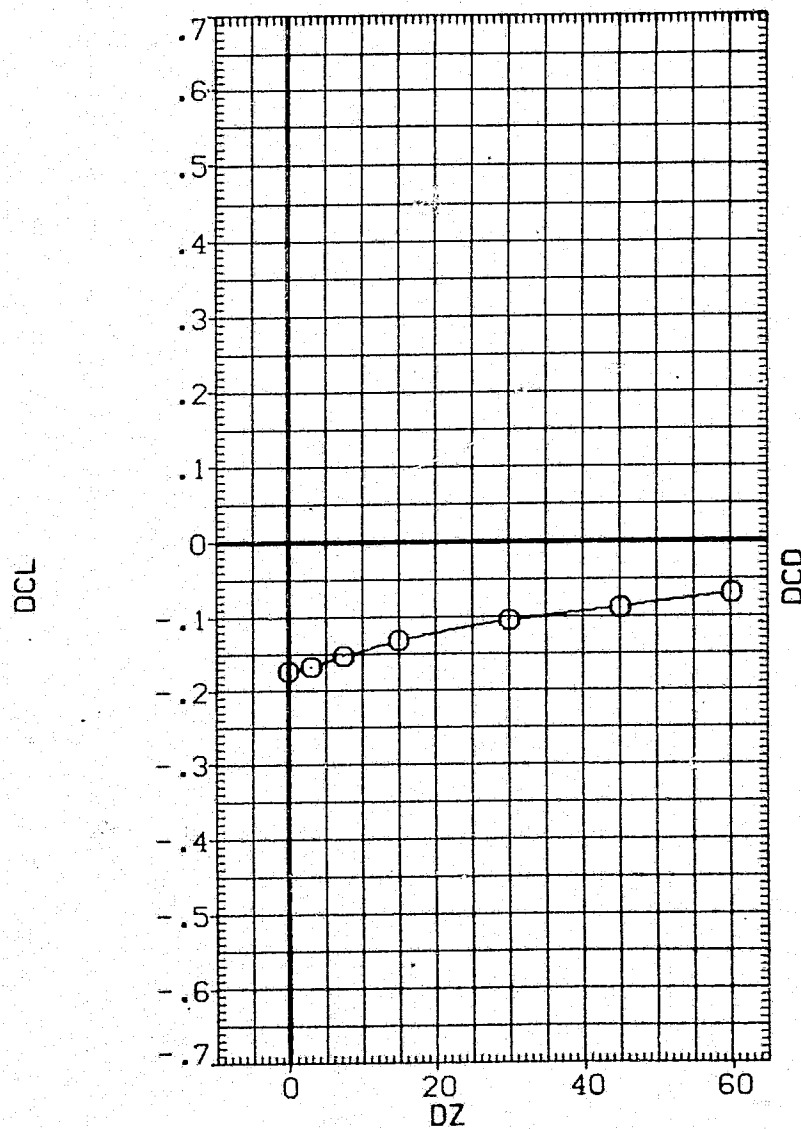


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL
○ALPHA0
10.000

PARAMETRIC VALUES

ALPHAC	4.000	BETAC	5.000
ELV-1B	.000	ELV-0B	3.000
ELEVON	5.000	MACH	.600
PHI	.000	DX	.000
DY	10.000	BETA0	-5.000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

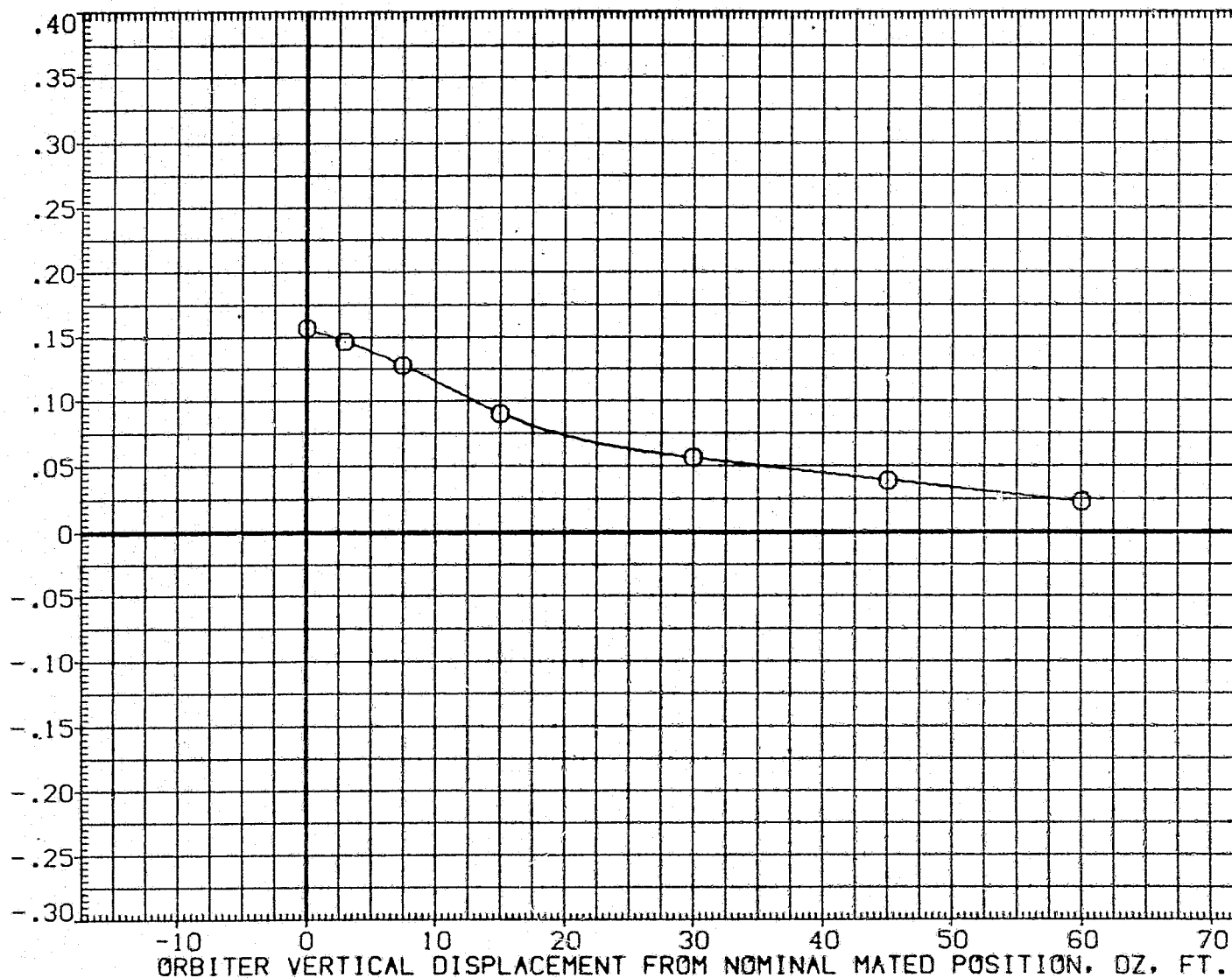


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	4.000	ELV-0B	5.000
		.000	ELV-0B	3.000
		5.000	MACH	.600
		.000	DX	.000
		10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMPP	1339.9000	IN.XC
YMPP	.0000	IN.YC
ZMPP	190.8000	IN.ZC
SCALE	.0300	

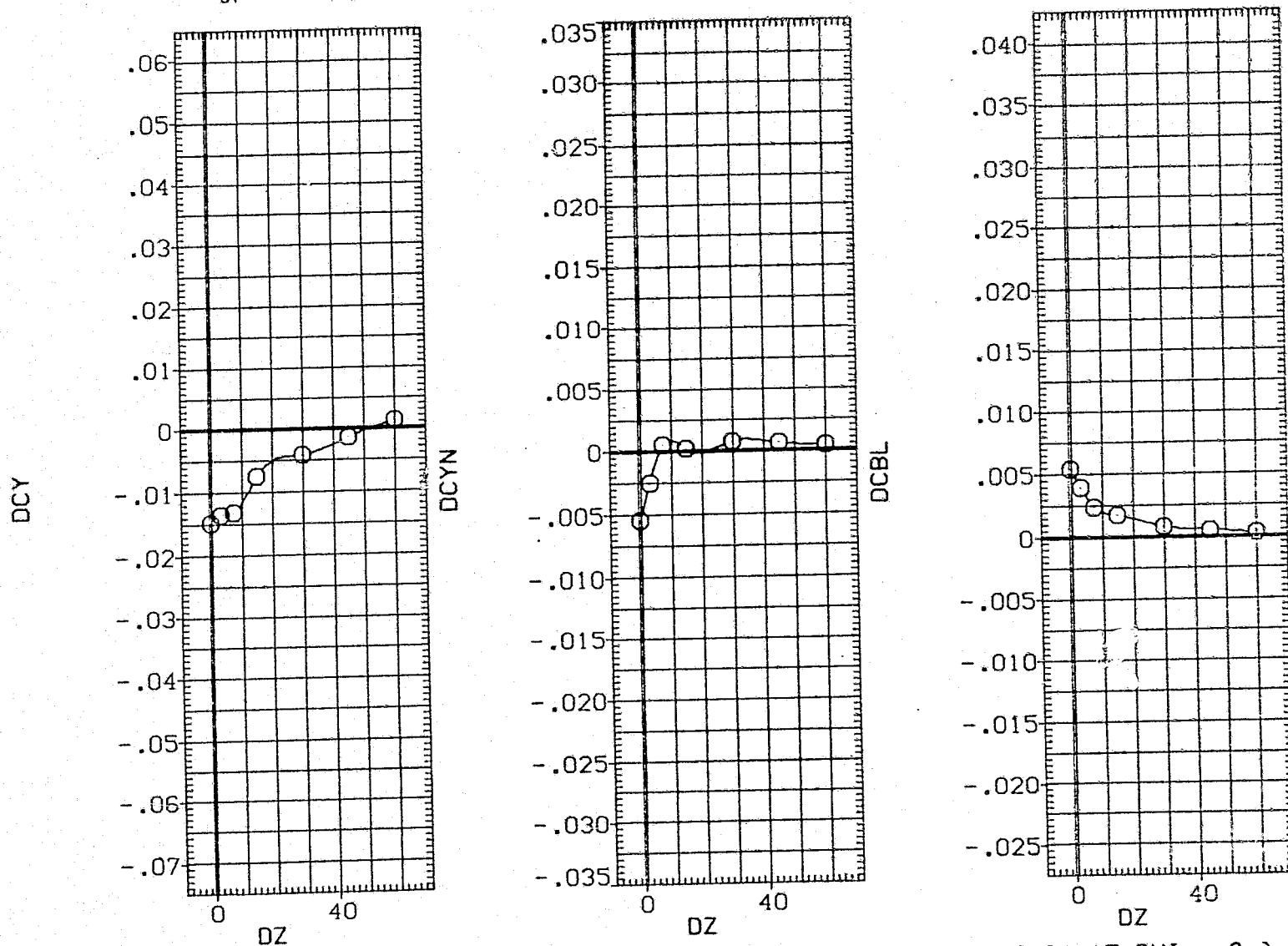


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	5.000
		ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PH1	.000	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

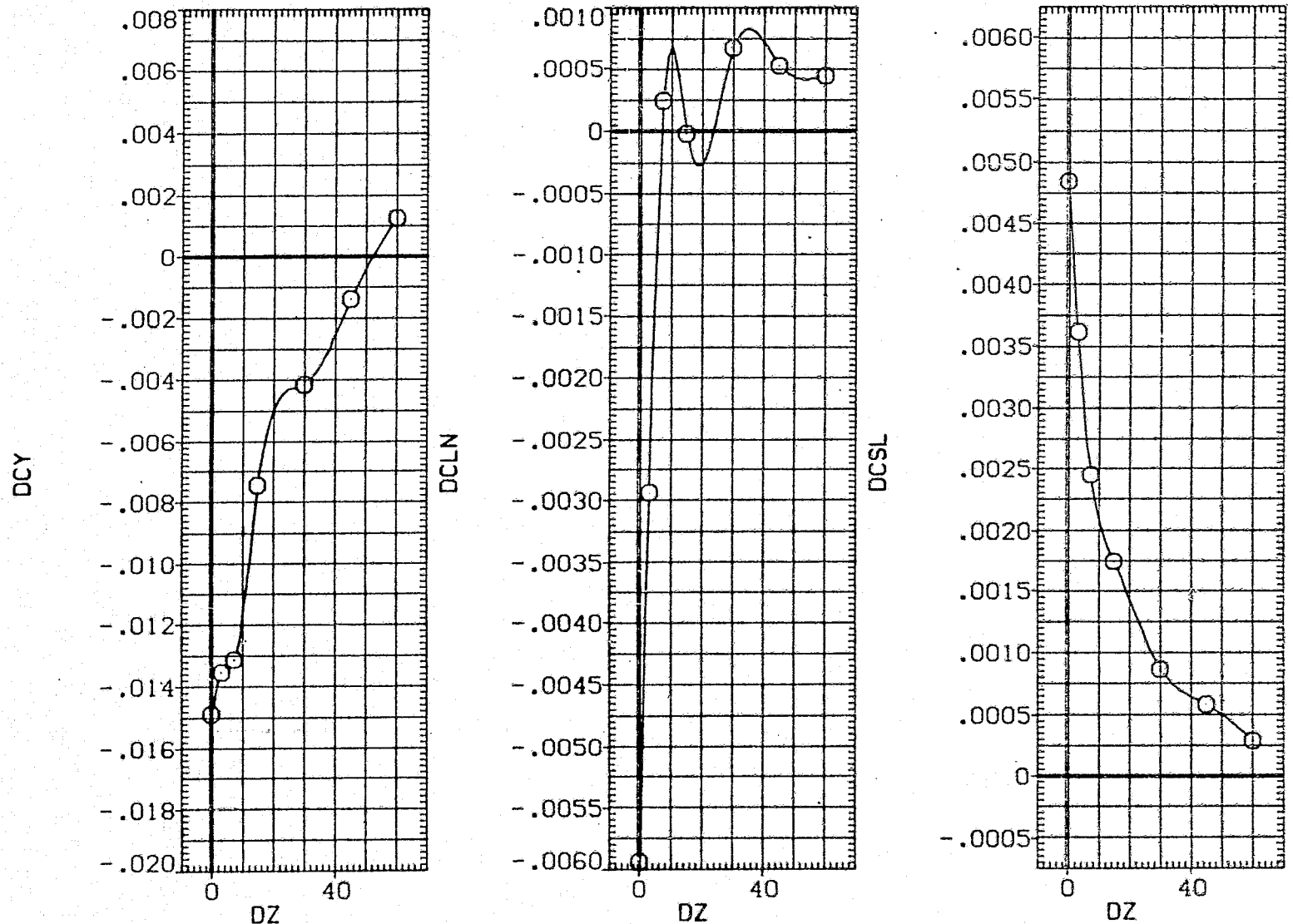


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		PHI .000 BETA0 -5.000
		BETA0 5.000 DY 10.000
		DX 10.000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

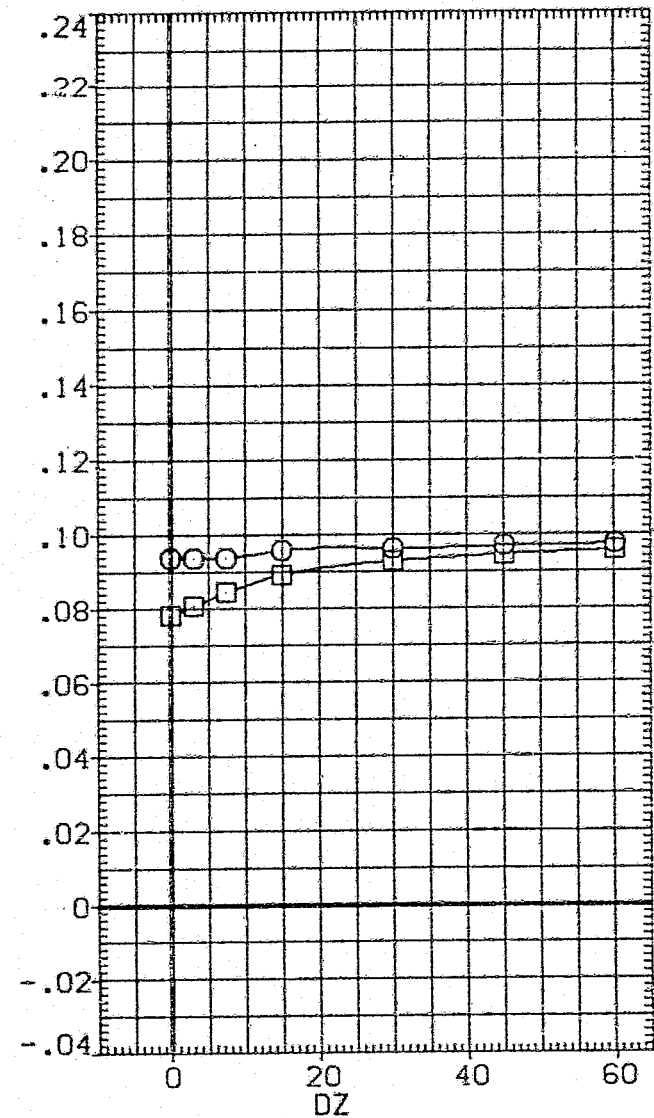
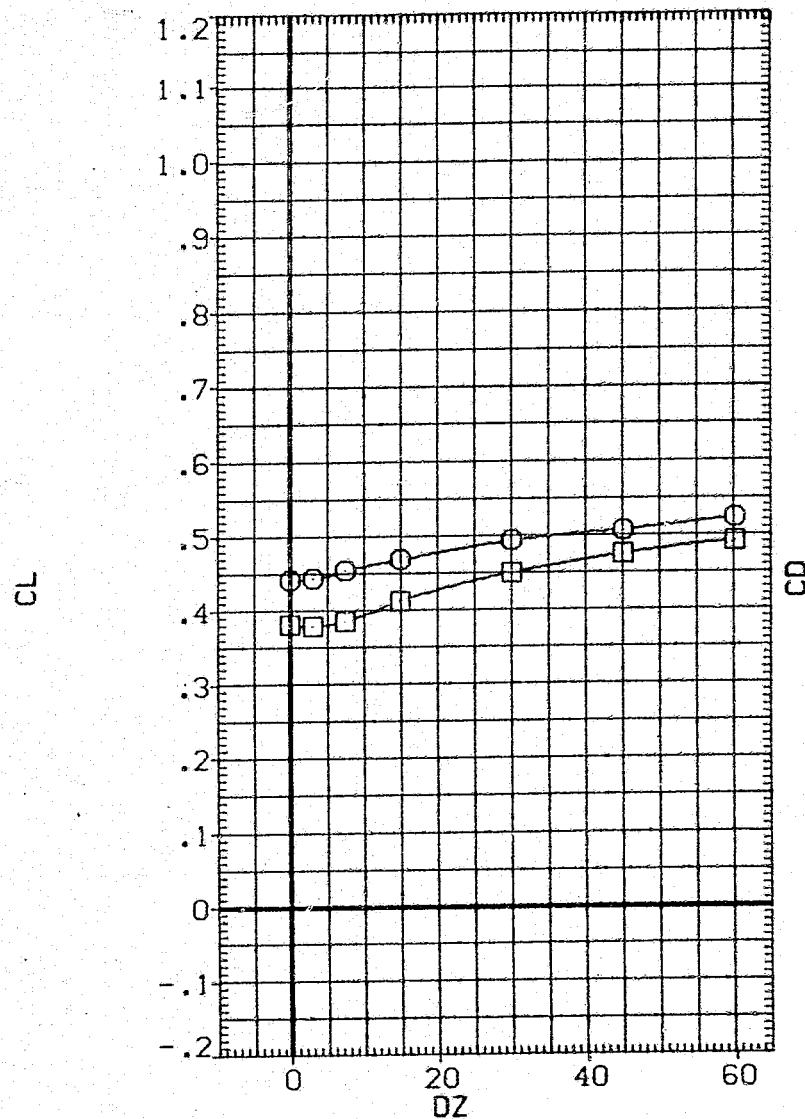


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	5.000	DY	10.000
		DX	10.000	ALFHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.3000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

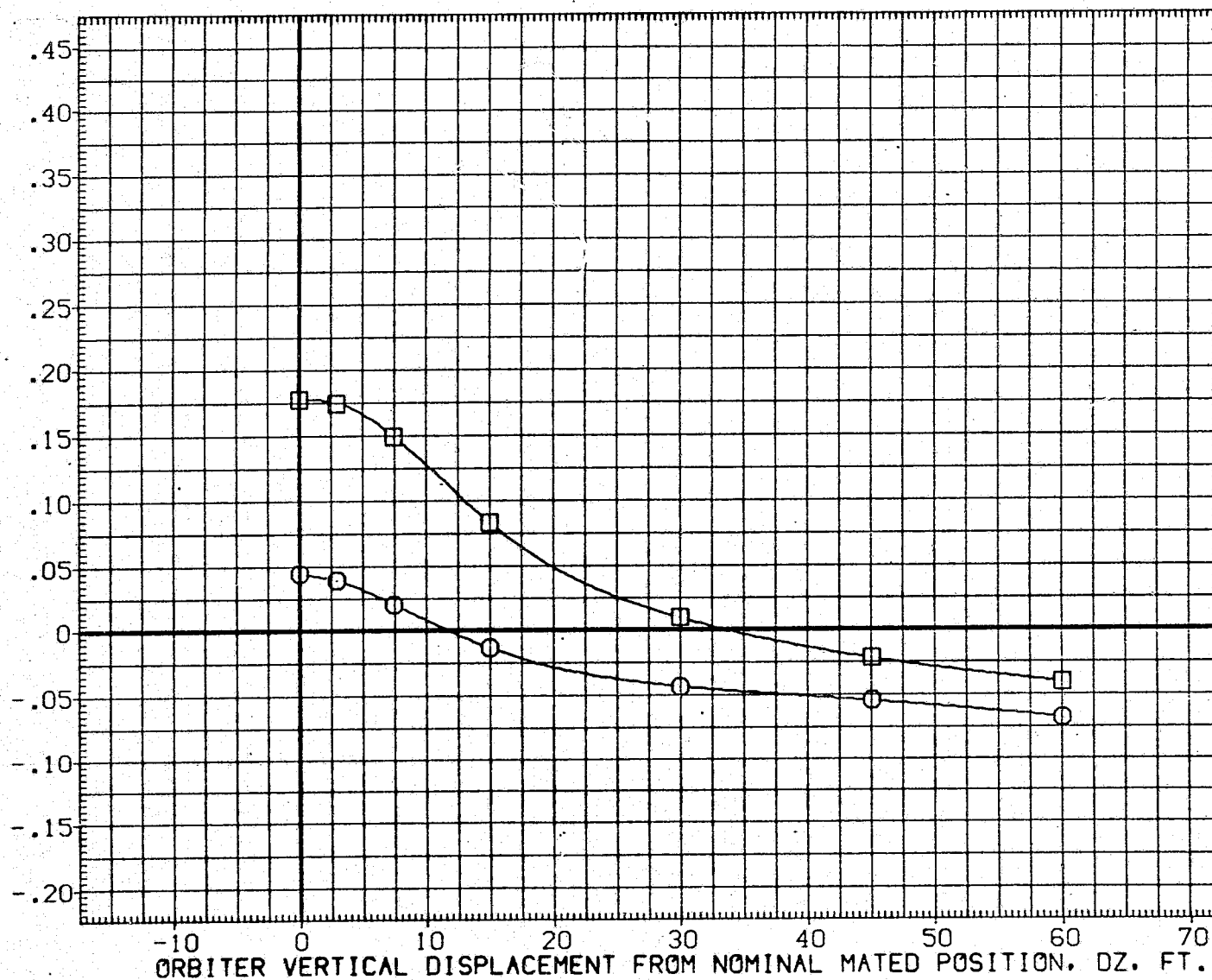


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	BETA0	-5.000
		BETAC	5.000	DY	10.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

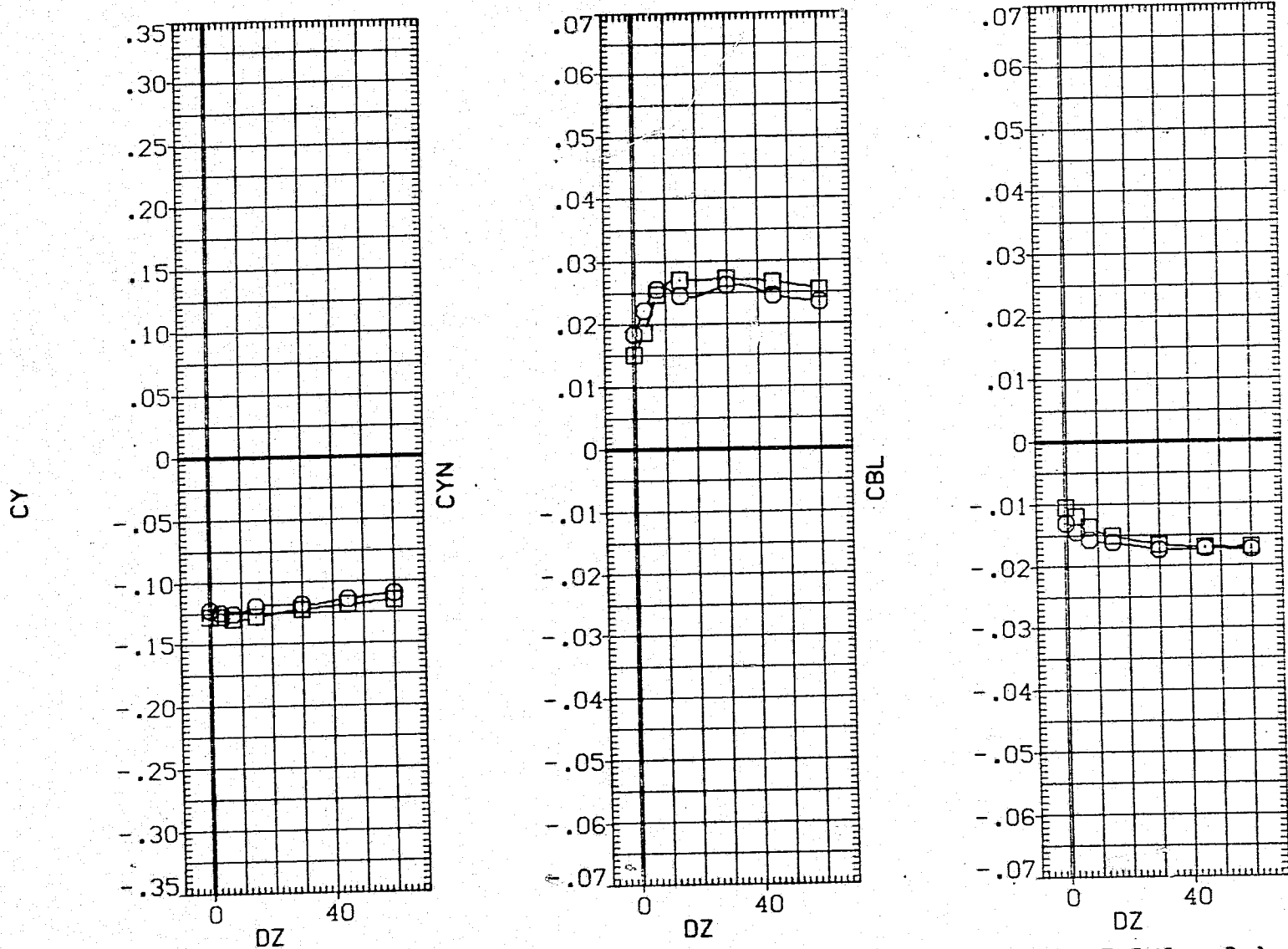


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA(MGN118)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB	VALUES
○	10.000	ELEVON	.000	3.000	
□	14.000	PHI	5.000	.600	
		BETAC	.000	-5.000	
		DX	5.000	10.000	
			10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

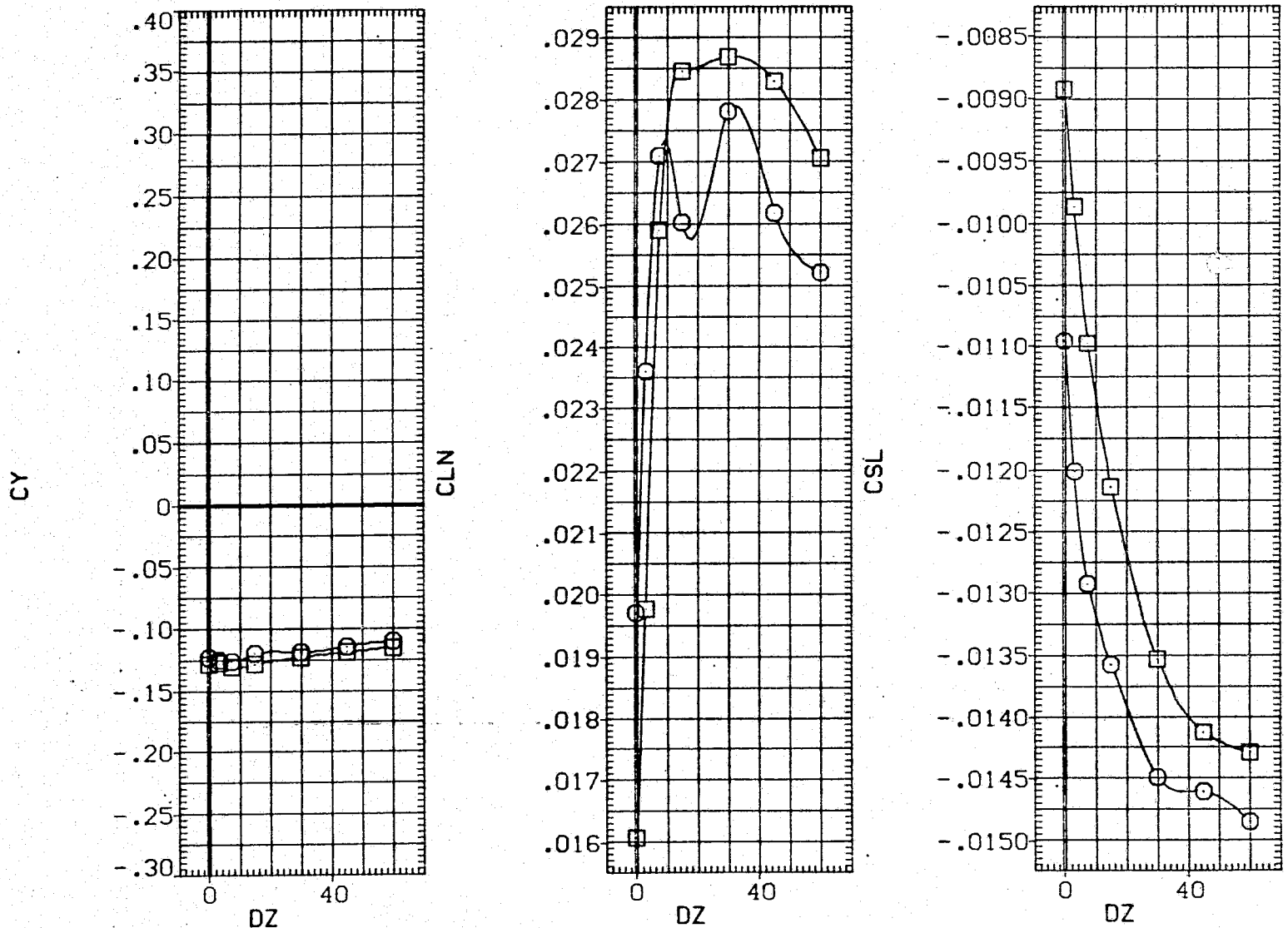


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC 5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

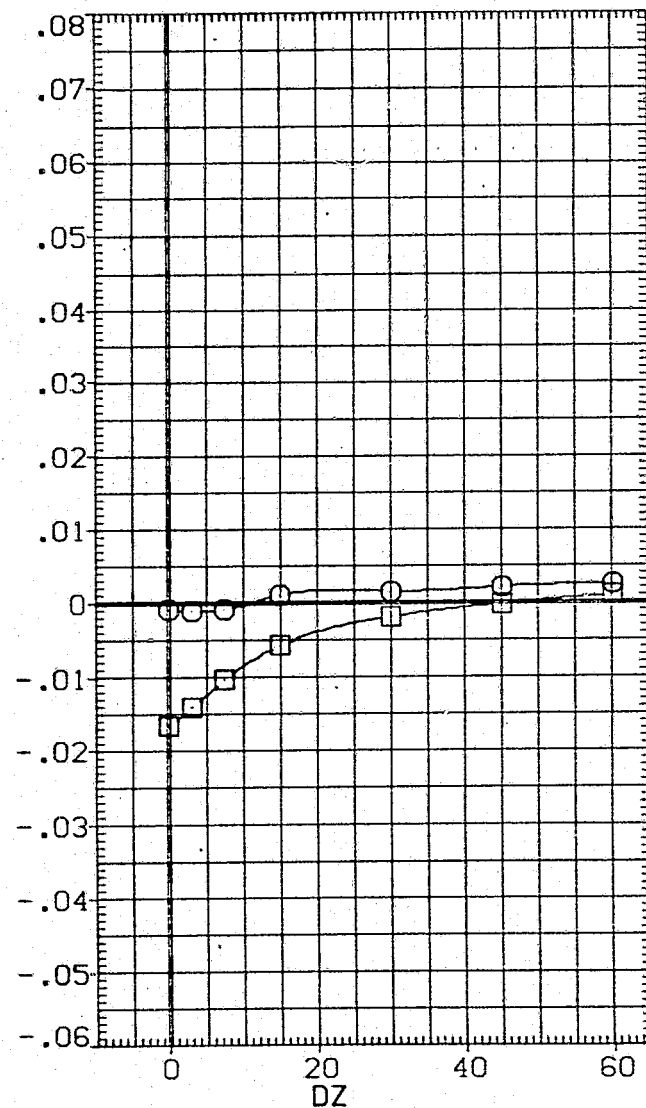
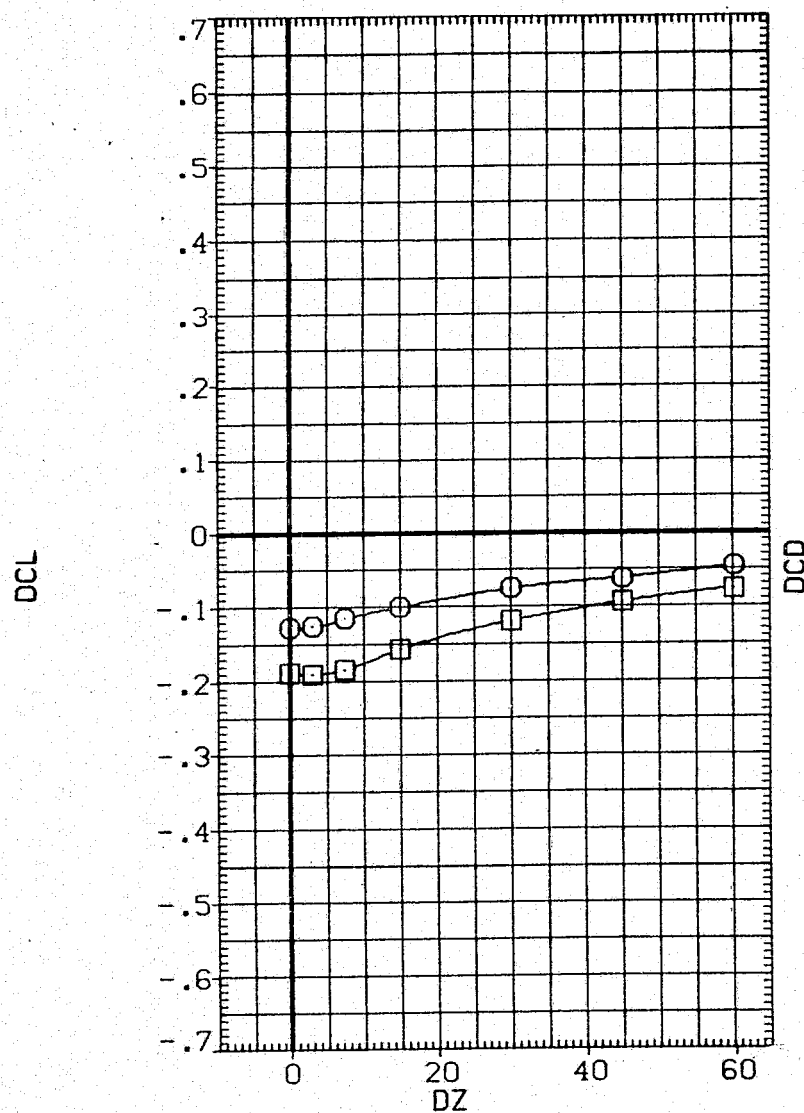


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000 BETAC

.000 ELV-0B

5.000 MACH

.000 DX

10.000 BETA0

5.000

3.000

.600

10.000

-5.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

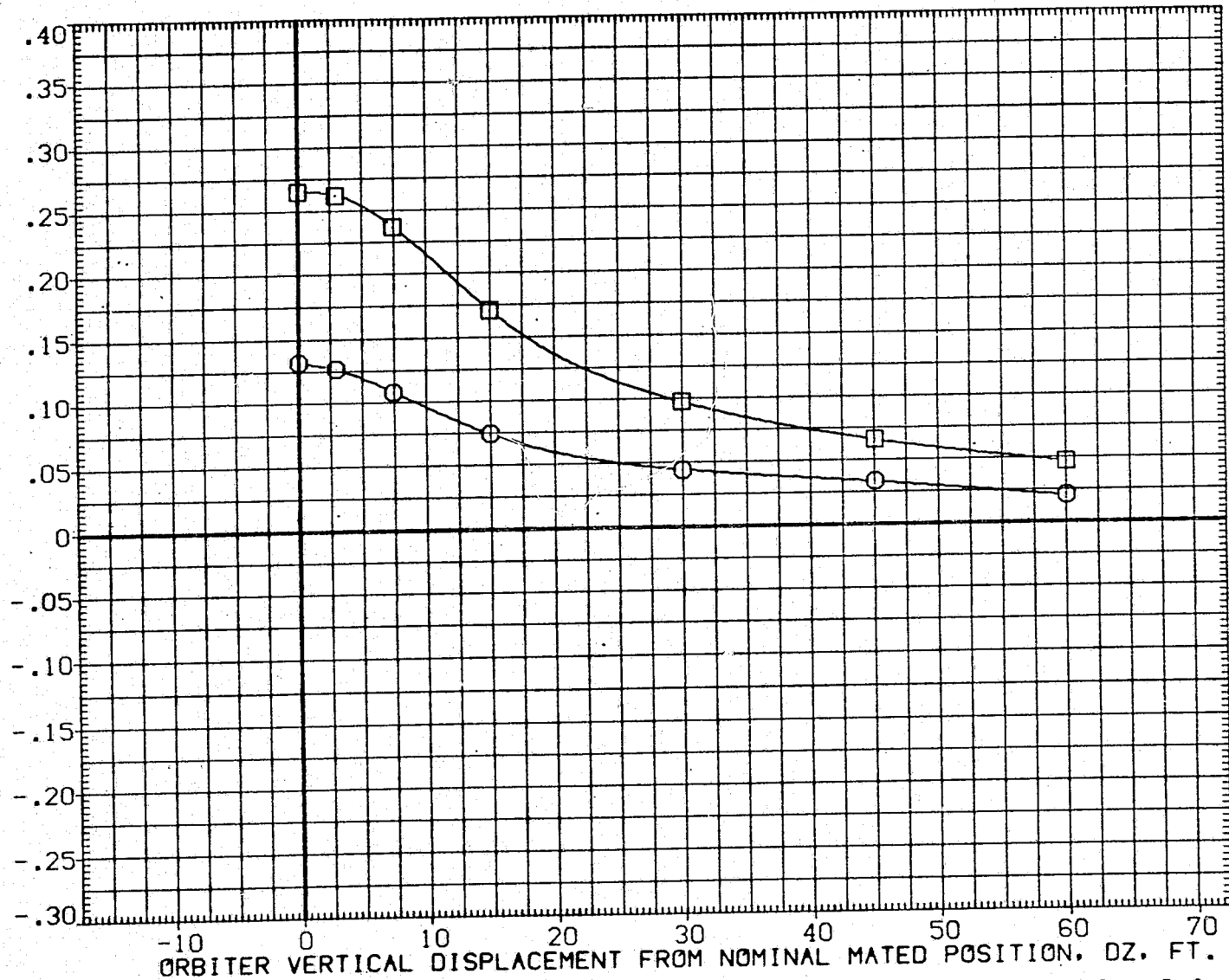


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES		
○	10.000	ALPHAC 4.000	BETAC	5.000
□	14.000	ELV-1B .000	ELV-0B	3.000
		ELEVON 5.000	MACH	.600
		PHI .000	DX	10.000
		DY 10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2343.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

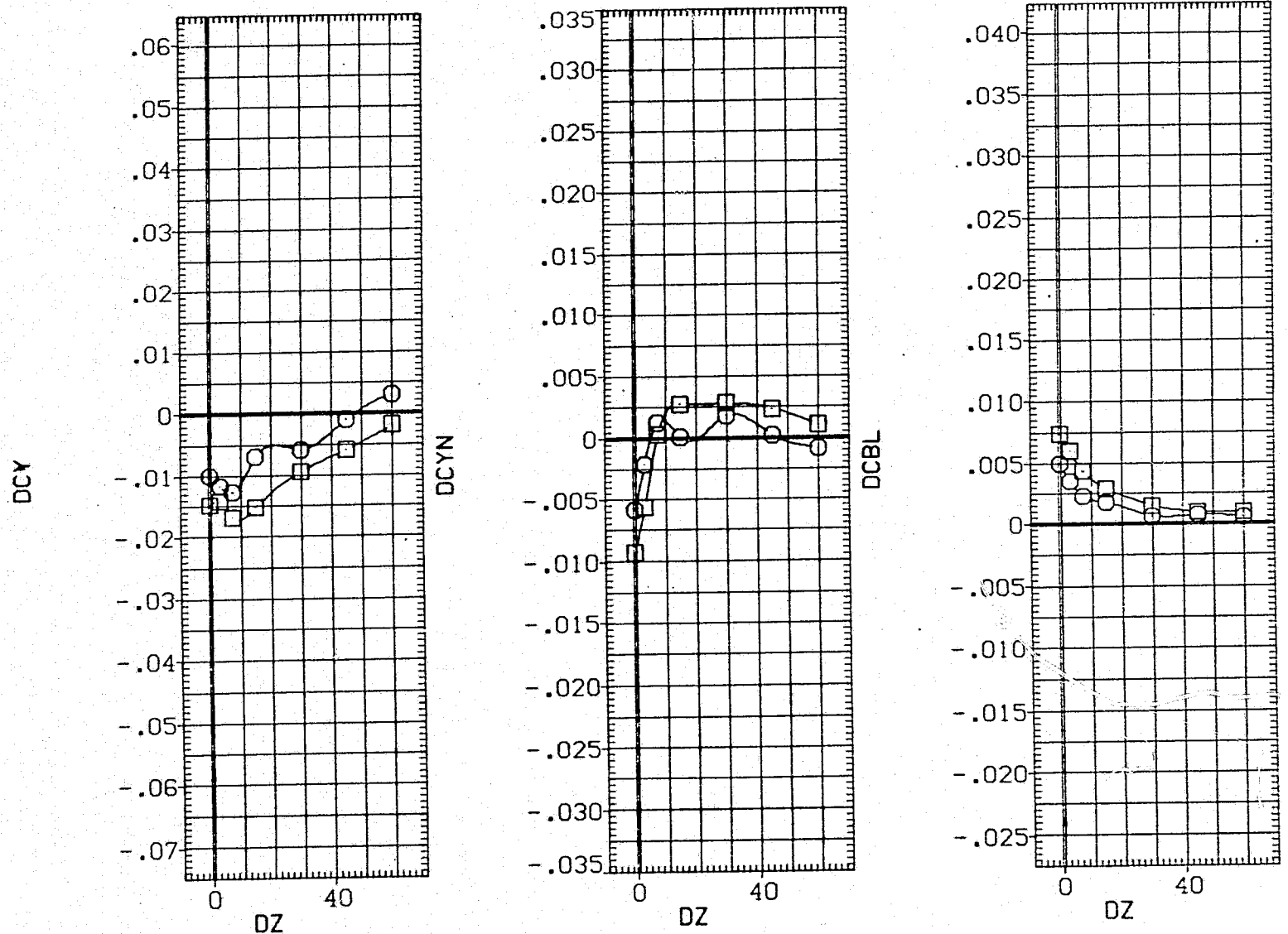


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	
○	10.000	ALPHAC	4.000	BETAC
□	14.000	ELV-1B	.000	ELV-0B
		ELEVON	5.000	MACH
		PHI	.000	DX
		DY	10.000	BETA0
				-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

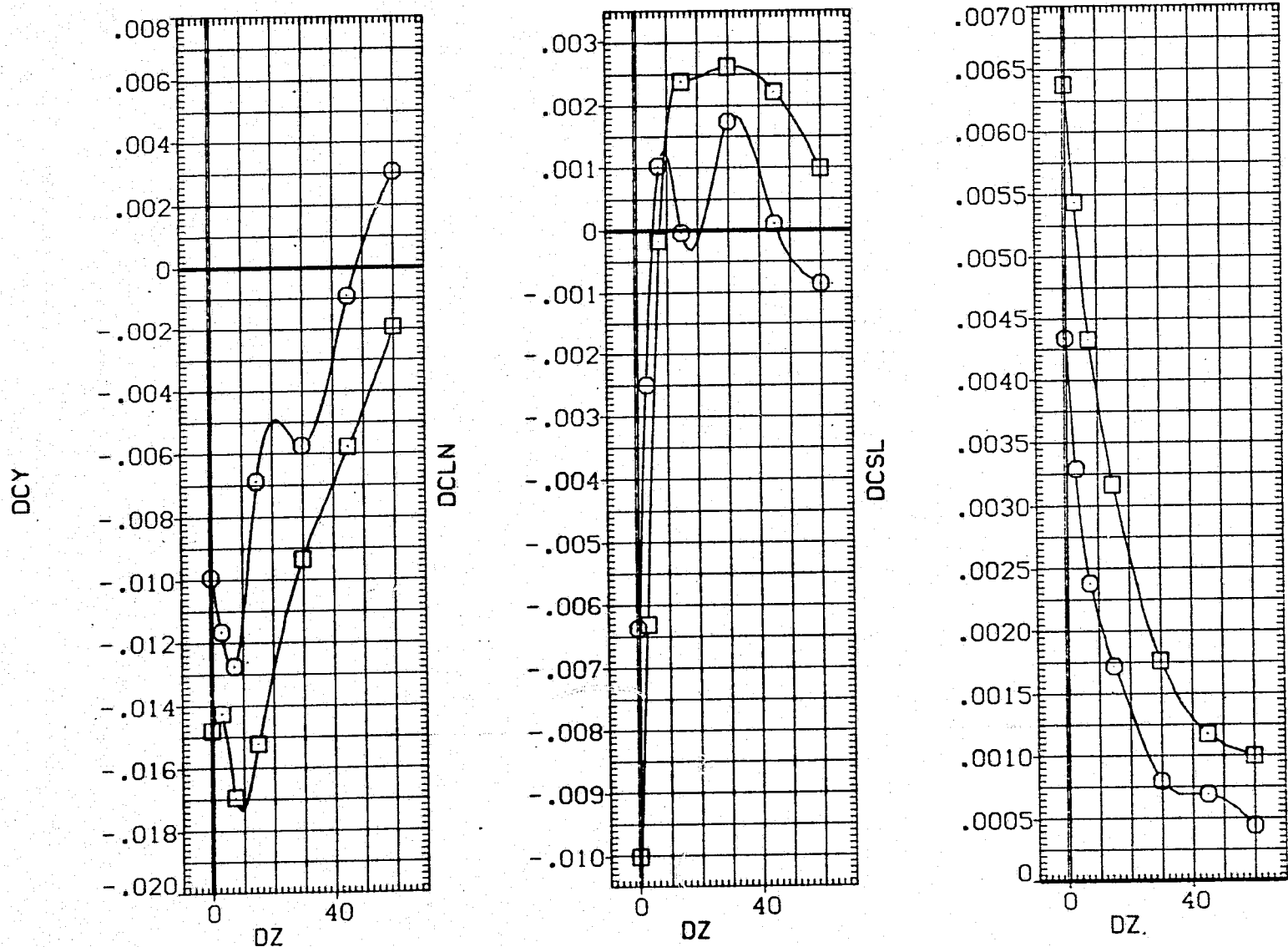


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000

14.000

ELV-1B

ELEVON

PHI

BETAC

DX

PARAMETRIC VALUES

.000

5.000

.000

5.000

10.000

ELV-0B

MACH

BETA0

DY

ALPHAC

3.000

.600

-5.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

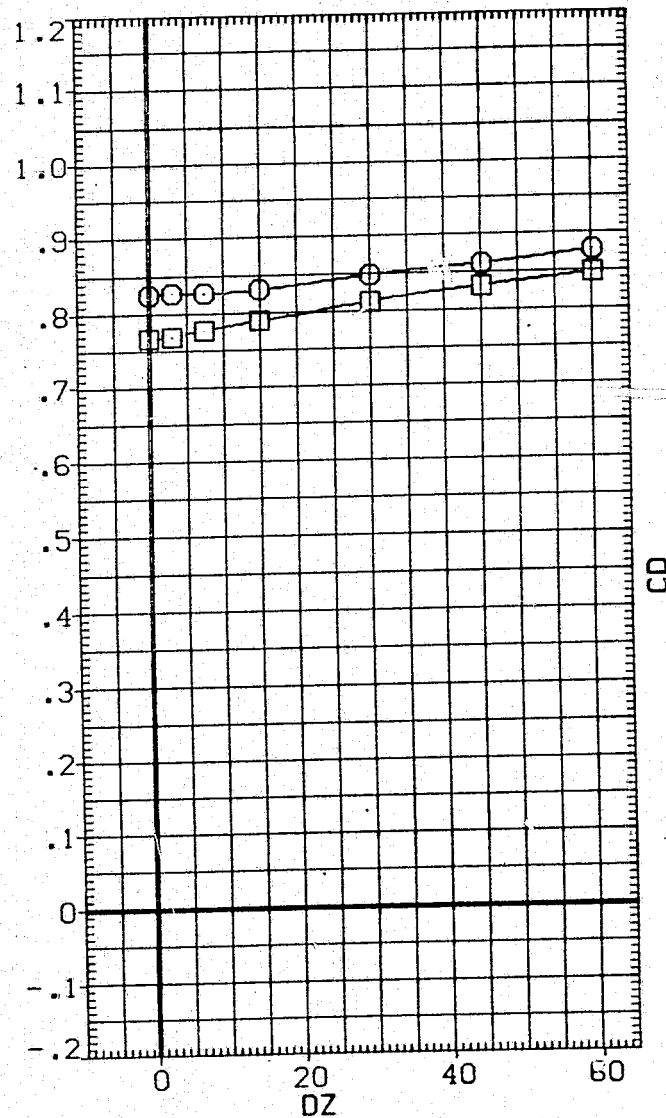
XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

CL



CD

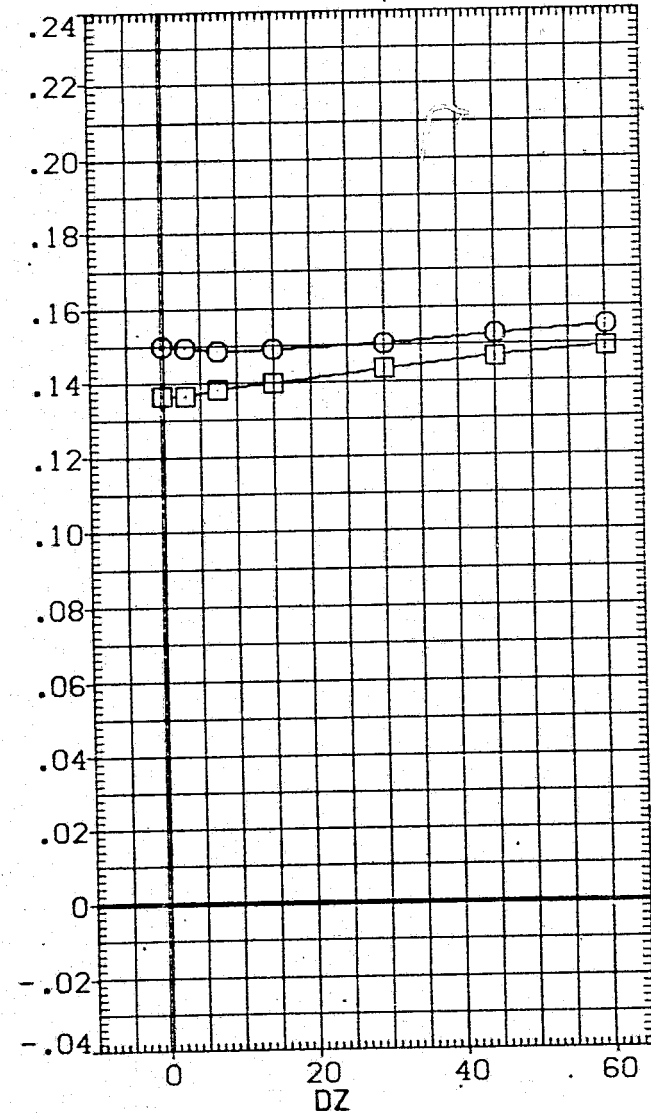


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	PARAMETRIC VALUES			
	ALPHA0	ELV-1B	.000	ELV-0B 3.000
○	10.000	ELEVON	5.000	MACH .600
□	14.000	PHI	.000	BETA0 -5.000
		BETAC	5.000	DY 10.000
		DX	10.000	ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

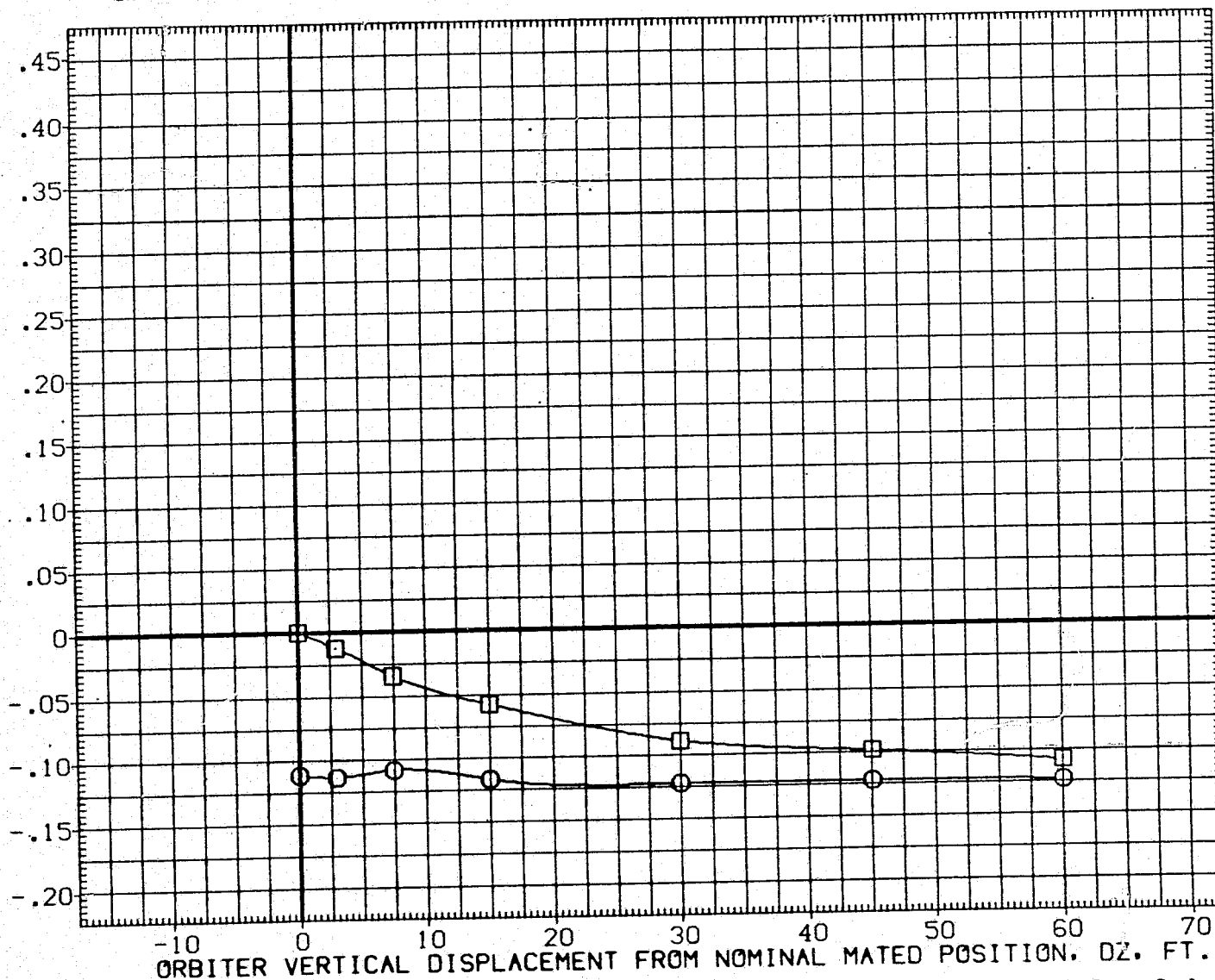


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000		.000	3.000
□	14.000	ELEVON	5.000	MACH .600
		PHI	.000	BETA0 -5.000
		BETAC	5.000	DY 10.000
		DX	10.000	ALPHAC 8.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

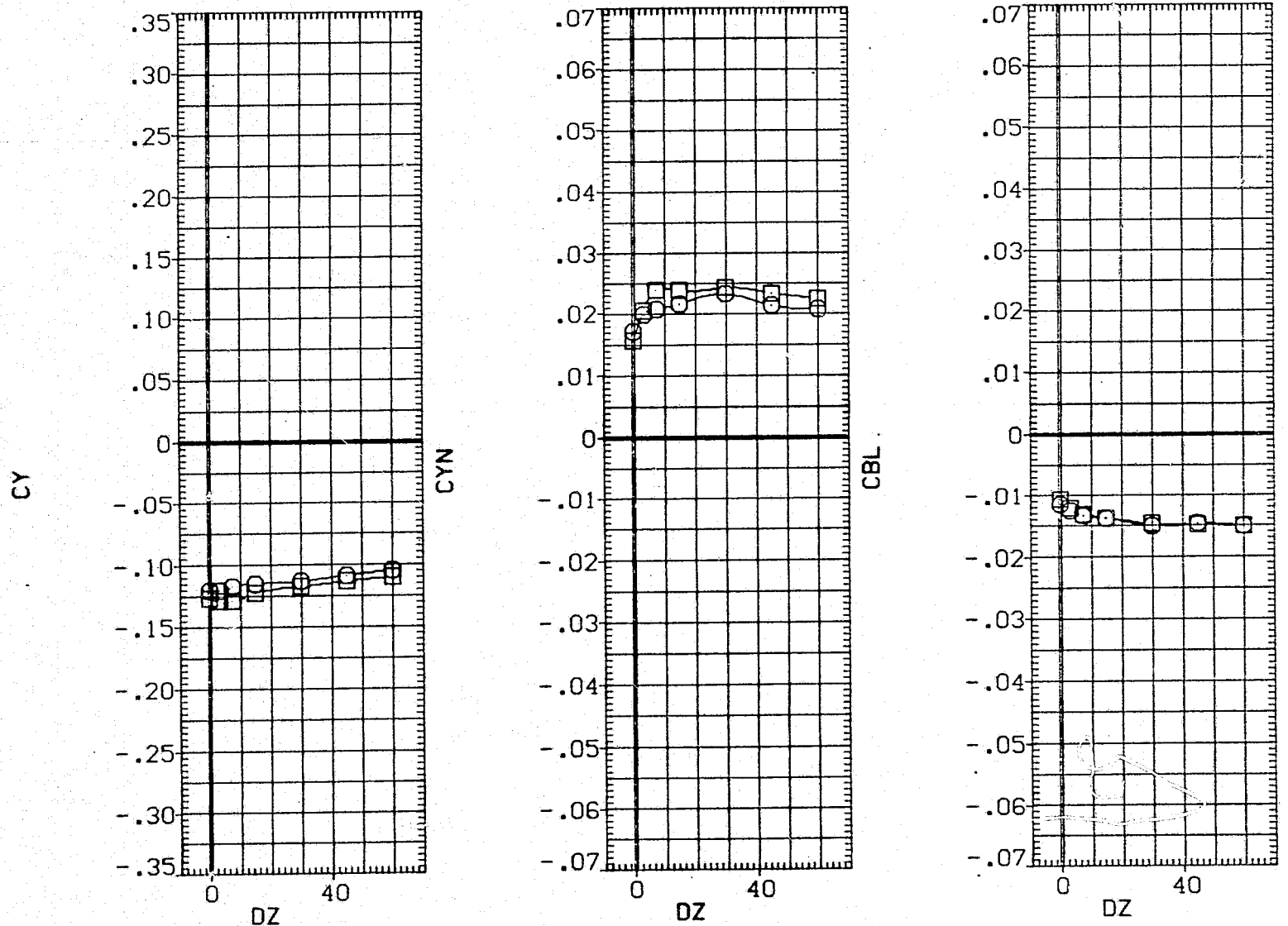


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB	
○	10.000	.000		3.000	
□	14.000	5.000		.600	
		PHI	.000	BETA0	-5.000
		BETAC	5.000	DY	10.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

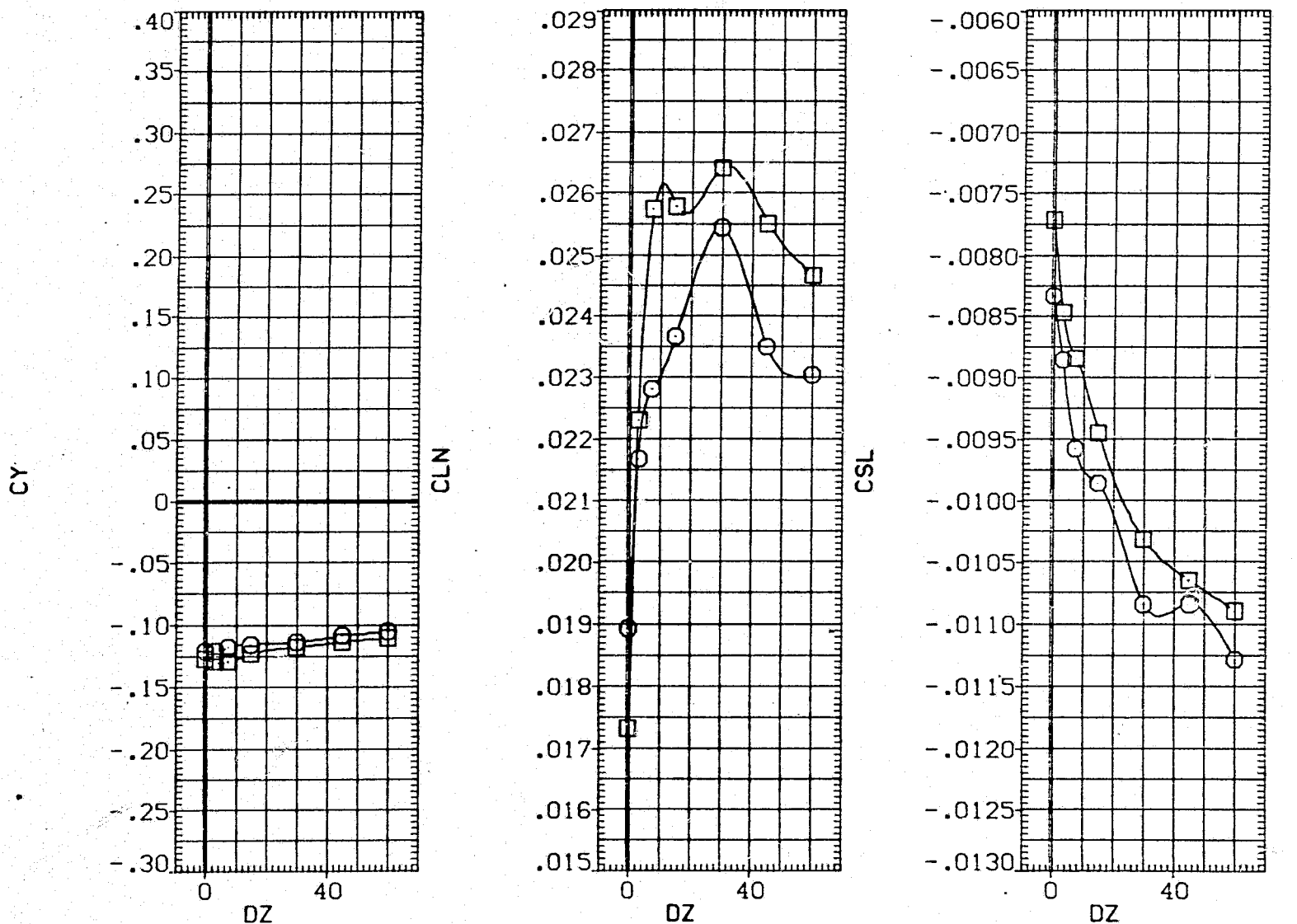


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC 5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

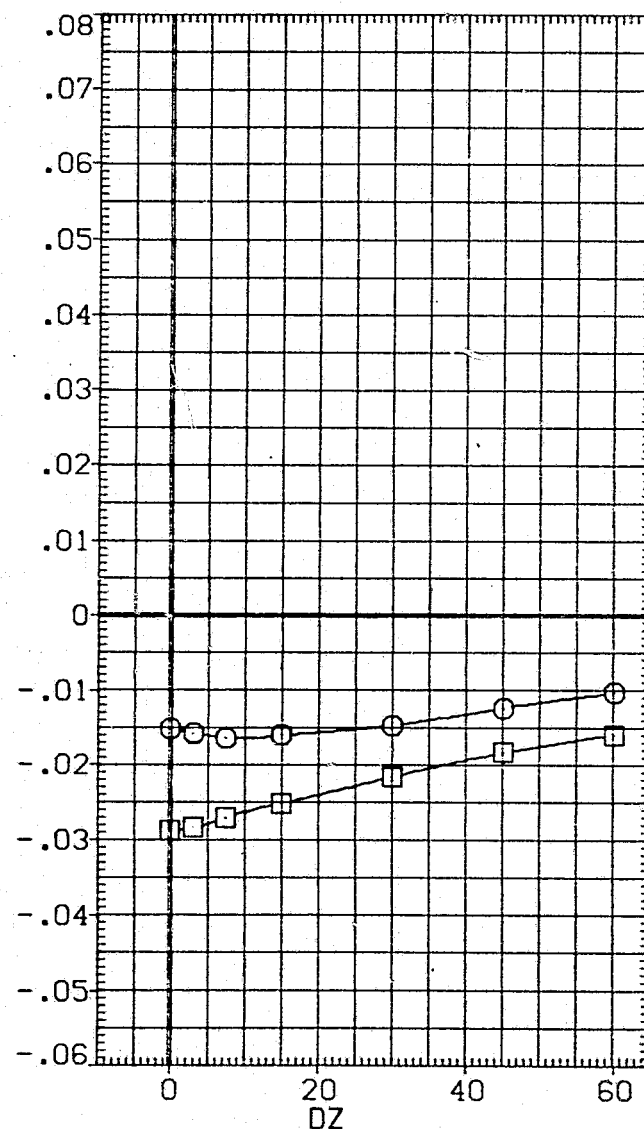
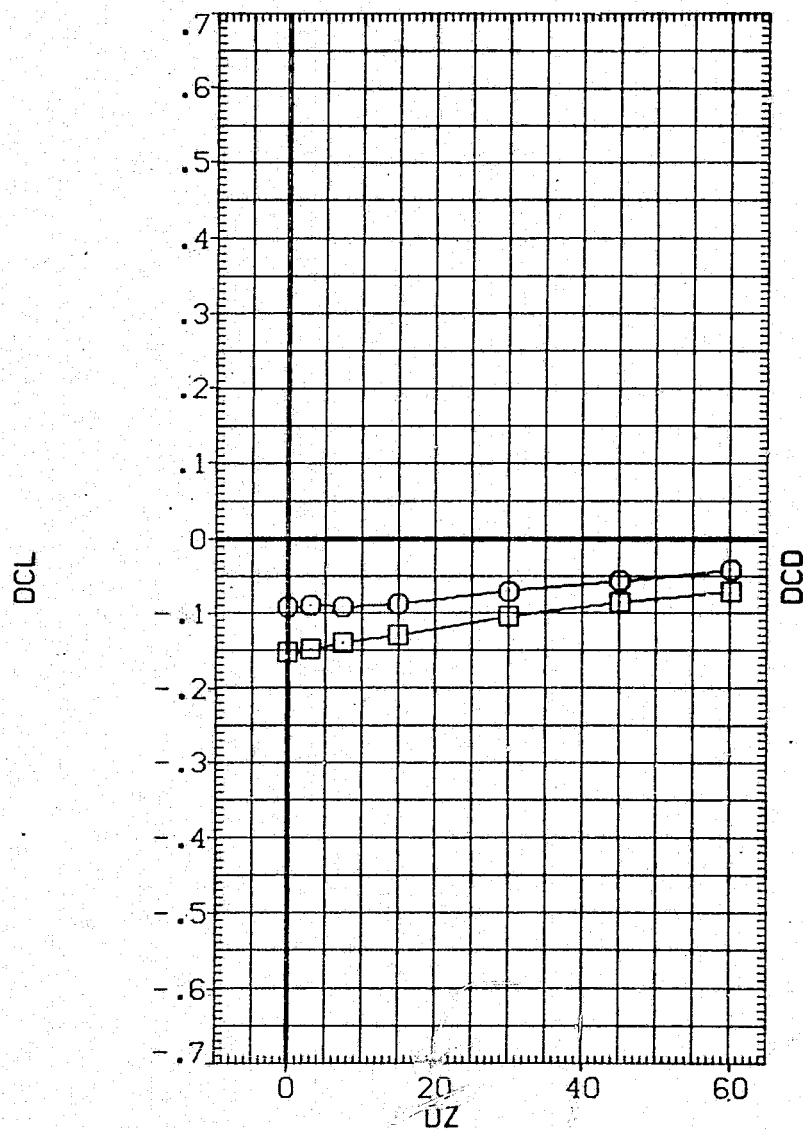


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

.000

10.000

BETAC

ELV-OB

MACH

DX

BETA0

5.000

3.000

.600

10.000

-5.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

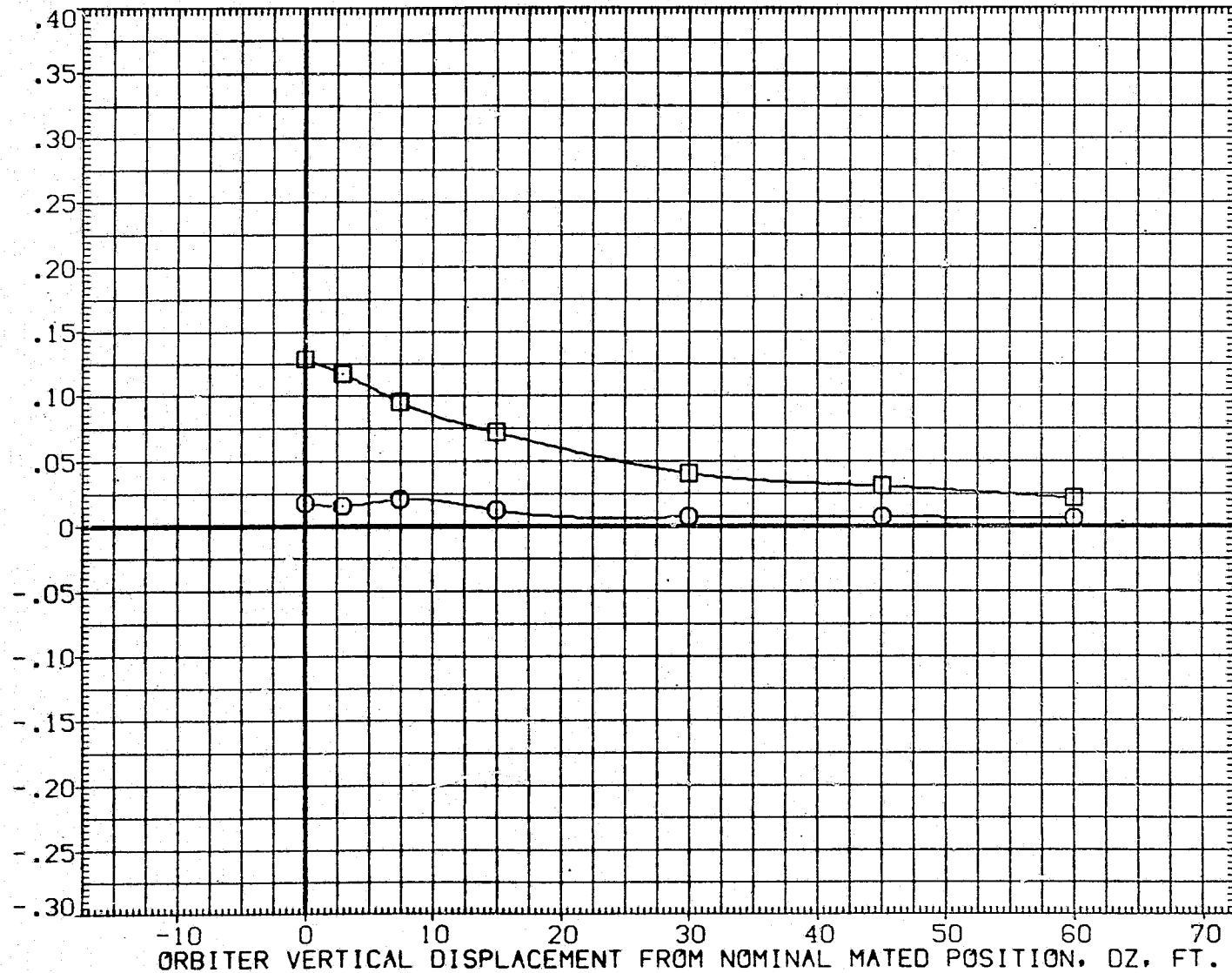


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1335.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

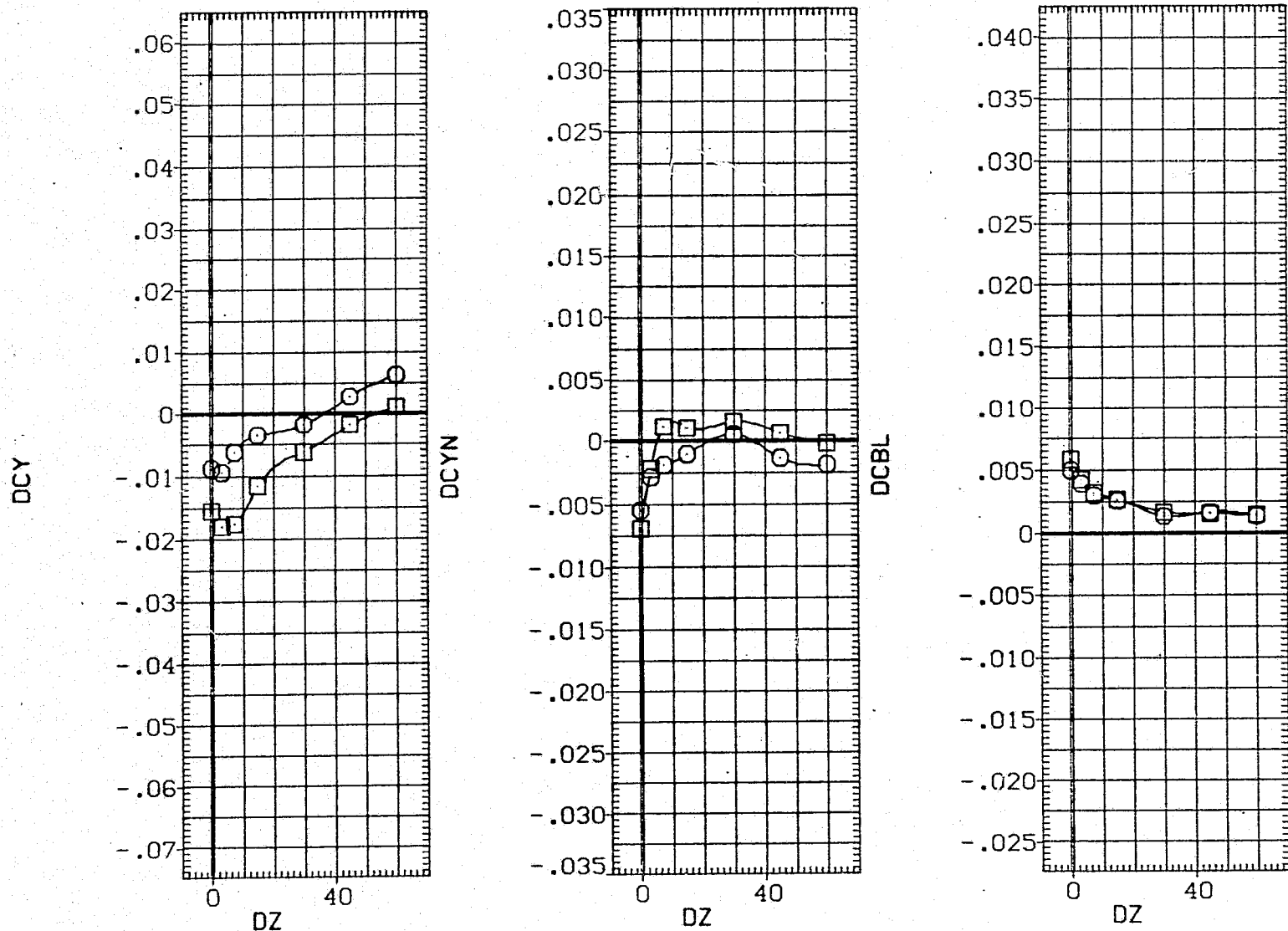


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

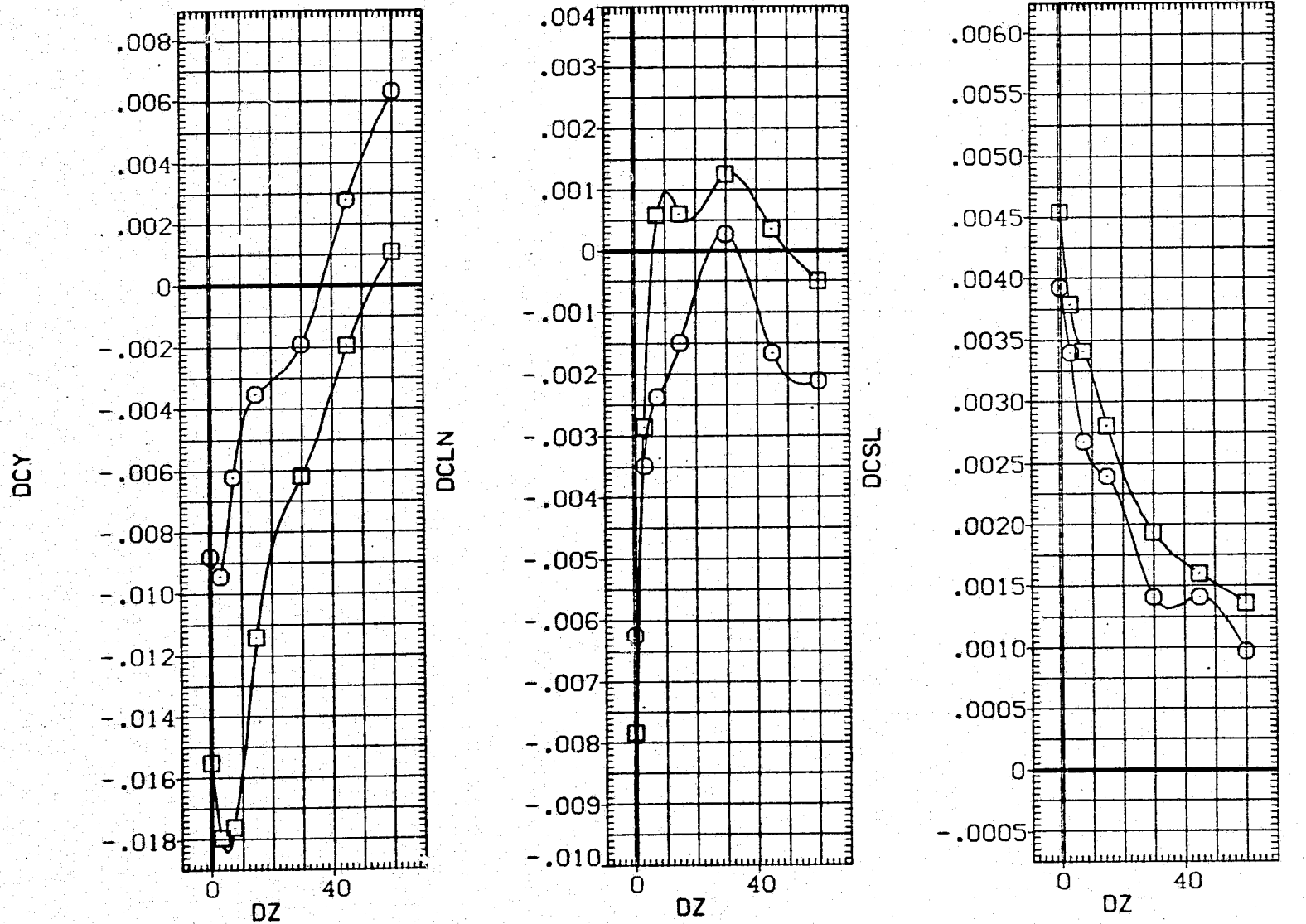


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

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CARRIER DATA (MGNO62)

SYMBOL



ALPHA0

10.000

14.000

ELV-18

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

.000

.000

ELV-08

MACH

BETAC

DY

ALPHAC

3.000

.600

-5.000

.000

4.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

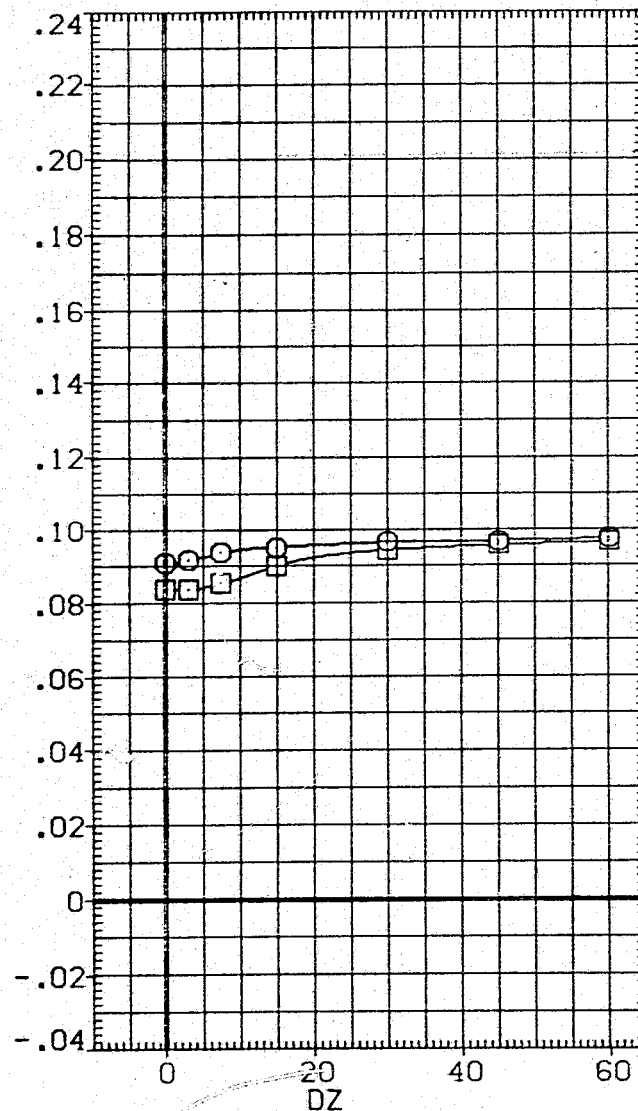
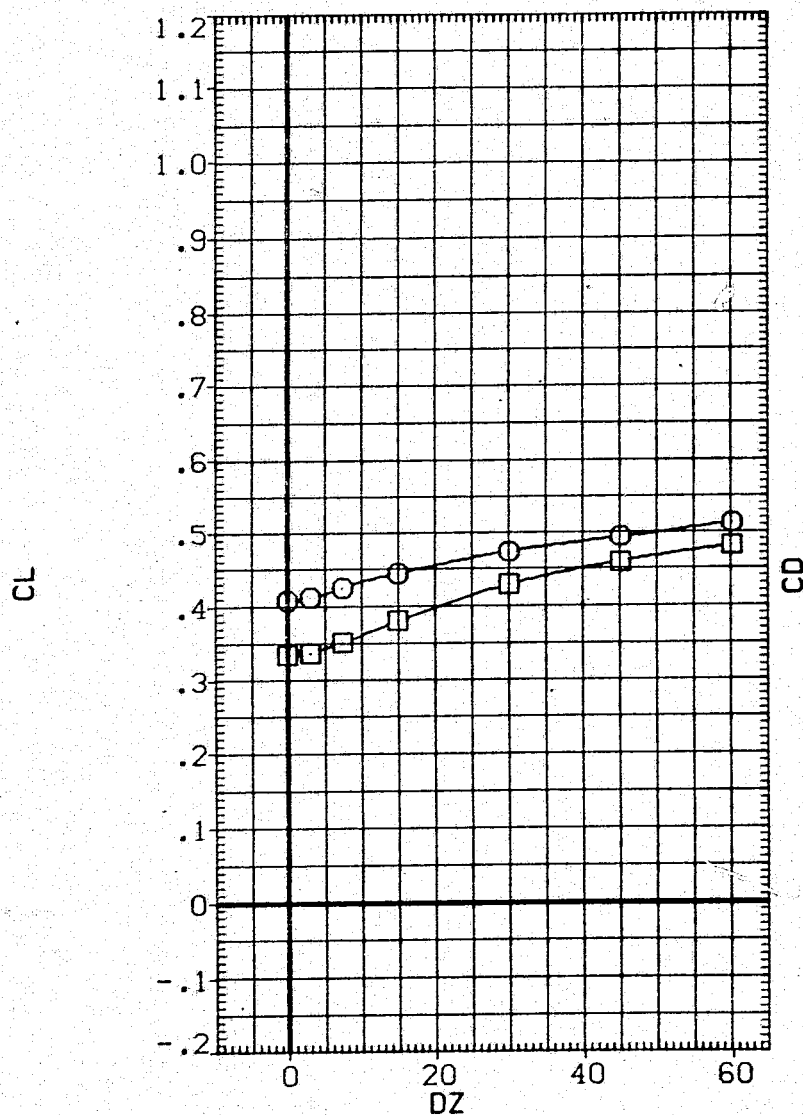


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

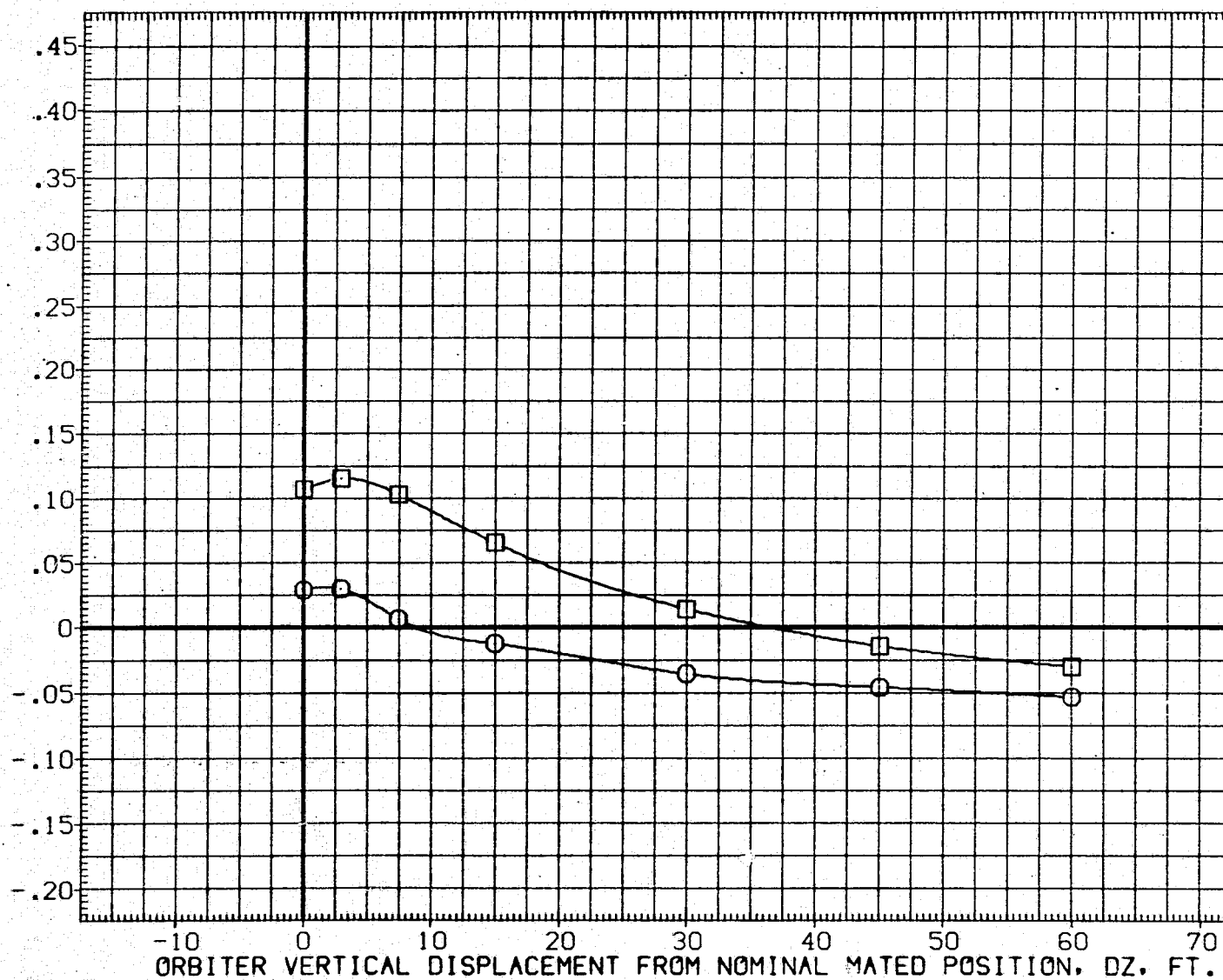


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB
○	10.000	.000	MACH	3.000
□	14.000	5.000	BETAC	.600
		.000	DY	-5.000
		.000	ALPHAC	.000
		.000		4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

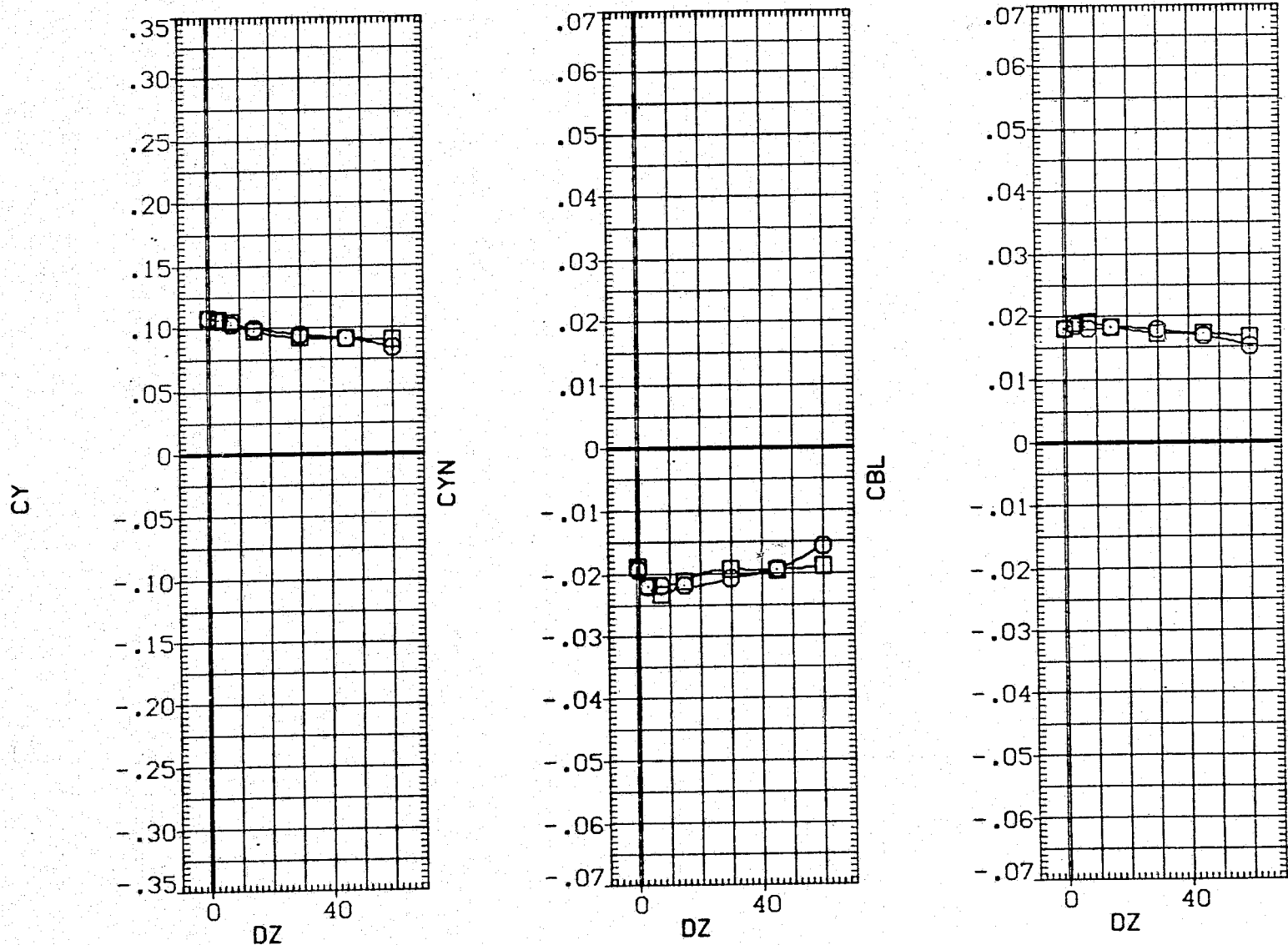


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	DY	-5.000
		DX	.000	ALPHAC	.000
					4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

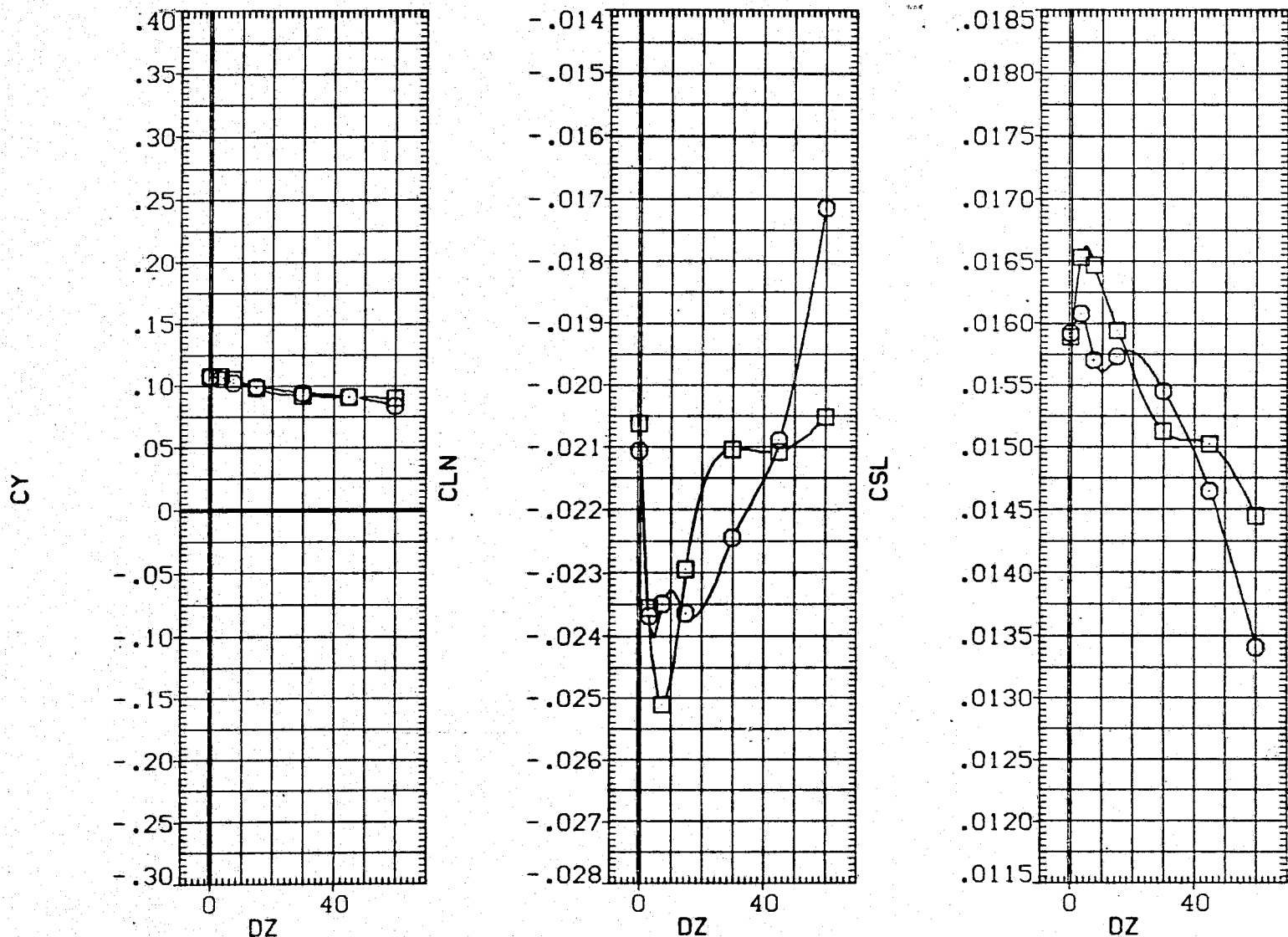


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC -5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX .000
		DY .000 BETA0 .000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

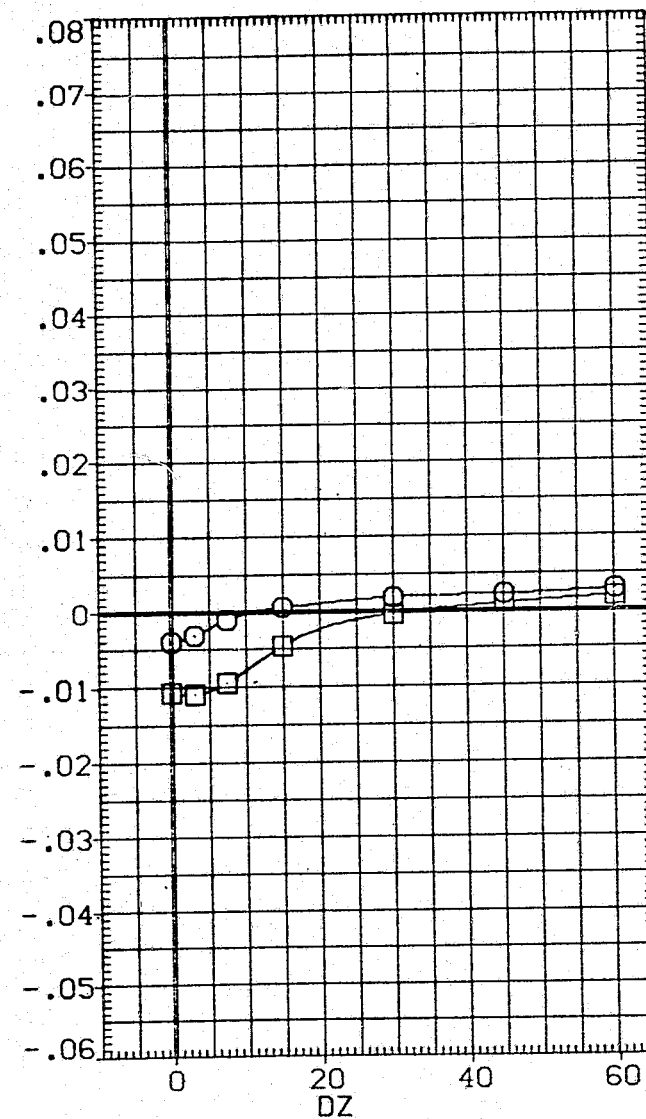
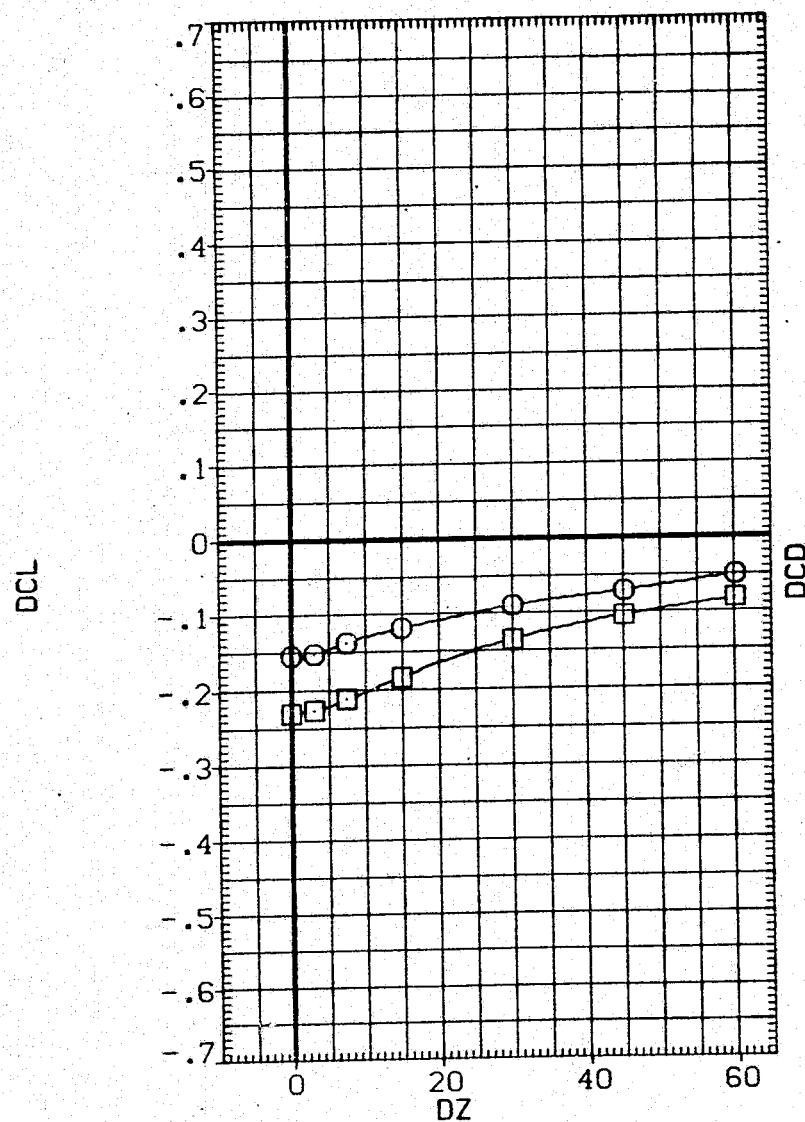


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL
○
□

ALPHA0
10.000
14.000

ALPHAC
ELV-IB
ELEVON
PHI
DY

PARAMETRIC VALUES

4.000 BETAC -5.000
.000 ELV-OB 3.000
5.000 MACH .600
.000 DX .000
.000 BETA0 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, SC LM

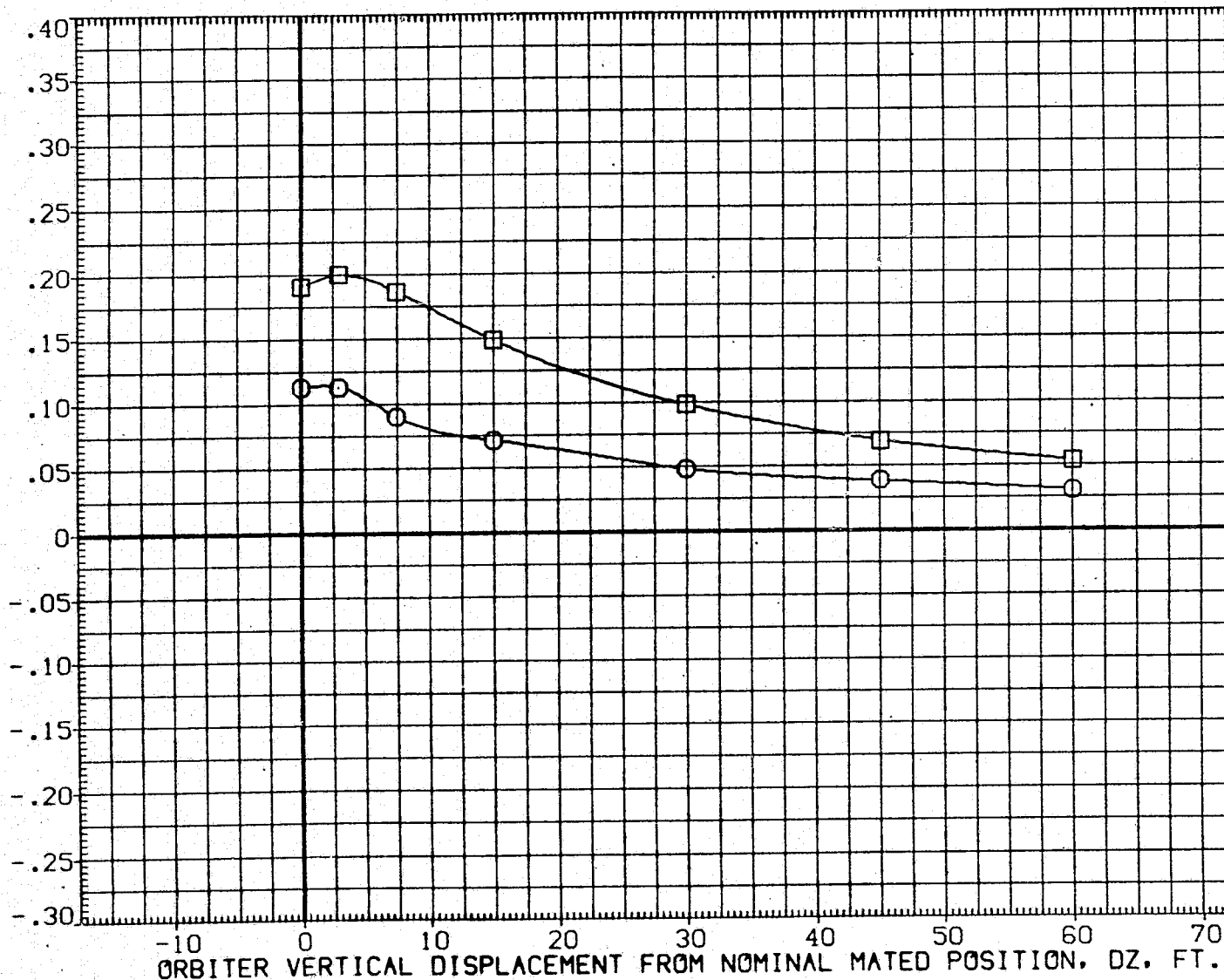


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	4.000	BETAC	-5.000
□	14.000	.000	ELV-0B	3.000
		5.000	MACH	.600
		.000	DX	.000
		.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

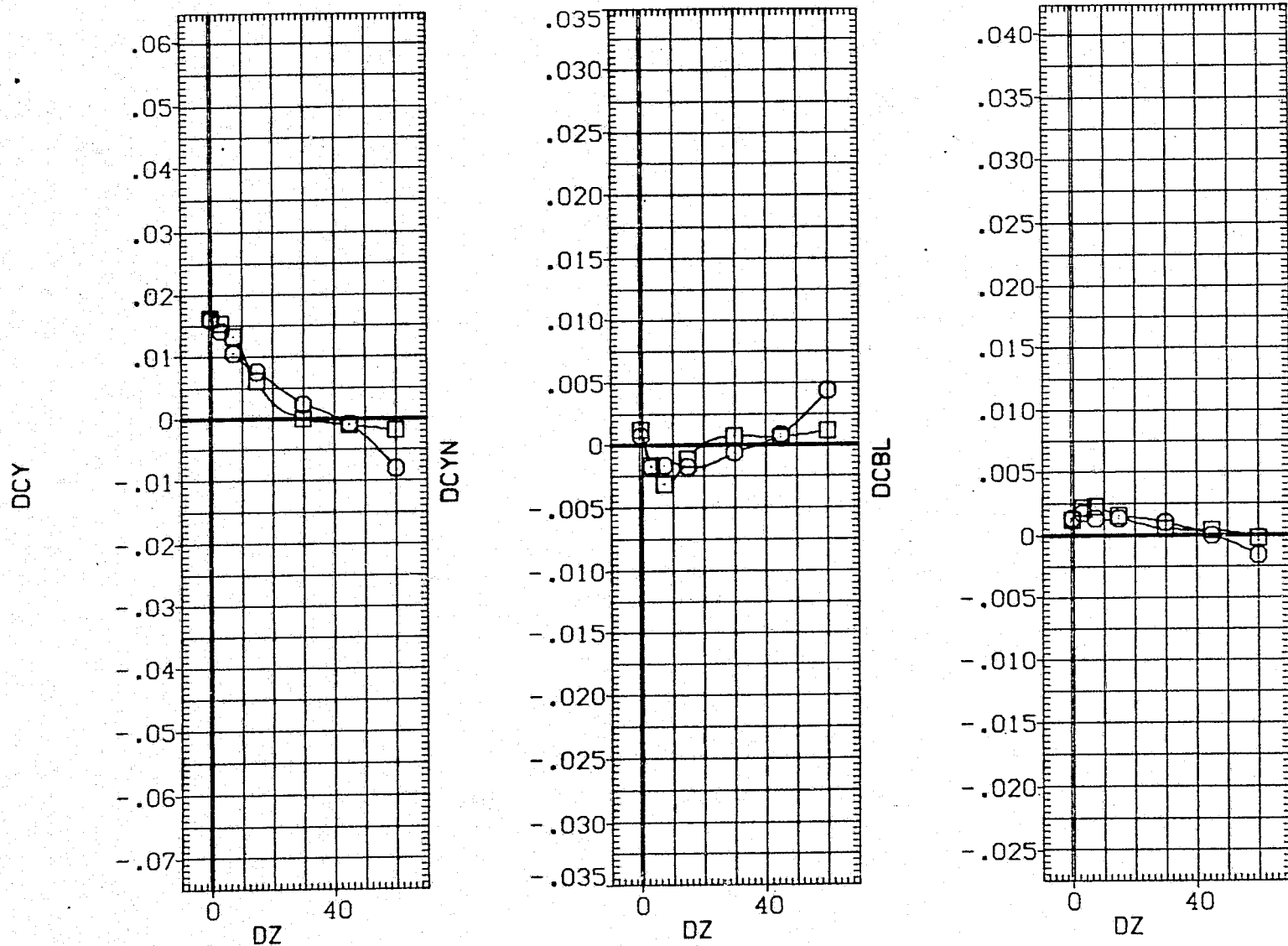


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC -5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX .000
		DY .000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

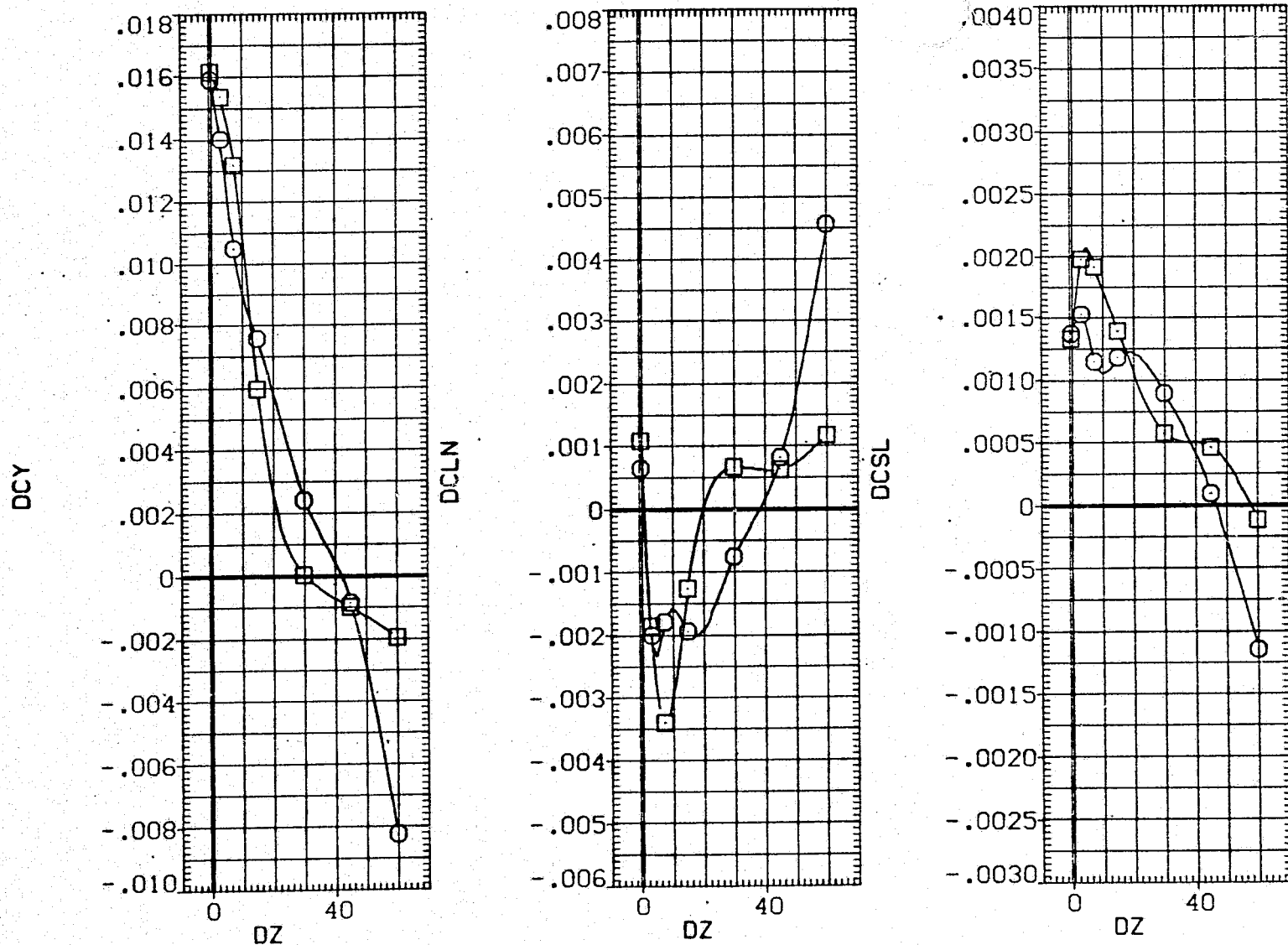


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	.600	
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

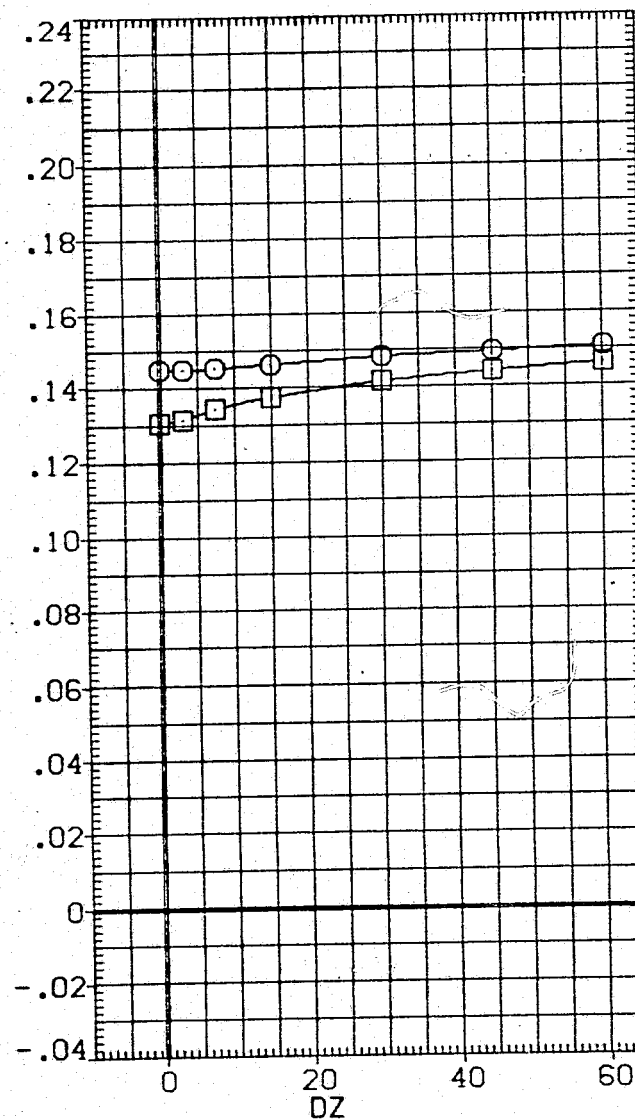
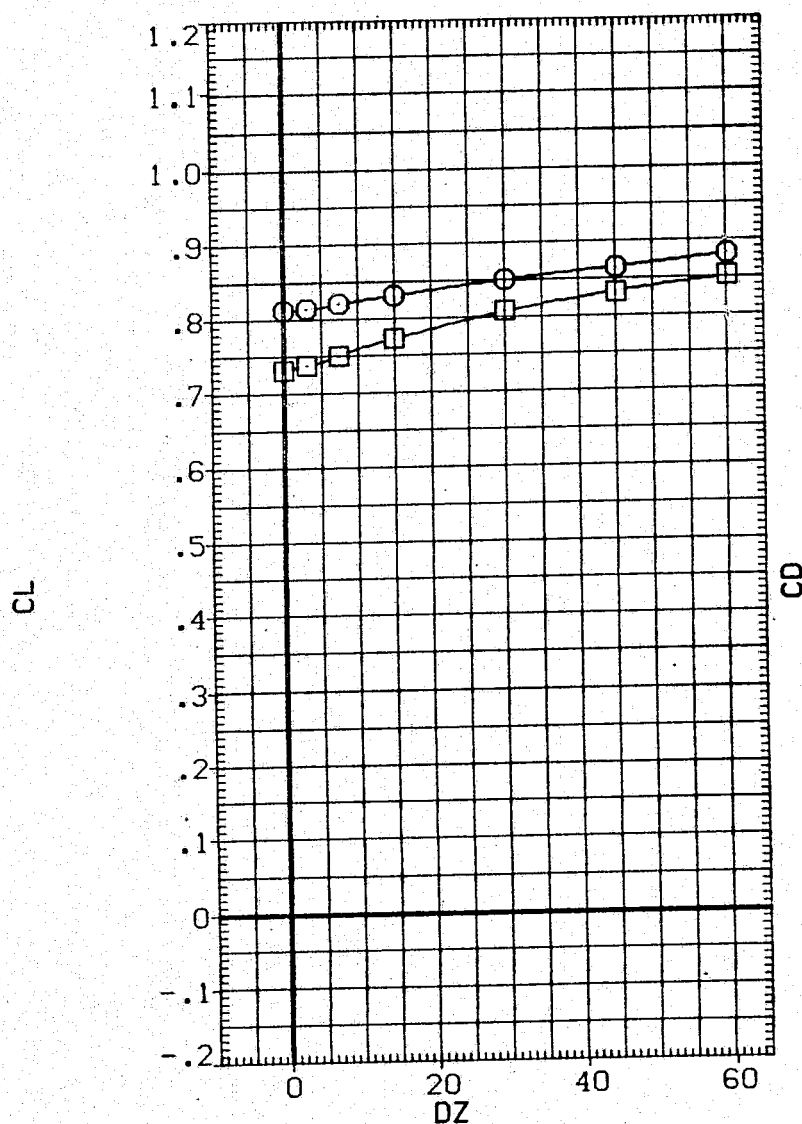


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000

ELV-IB

PARAMETRIC VALUES

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

.000

DY

.000

DX

.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

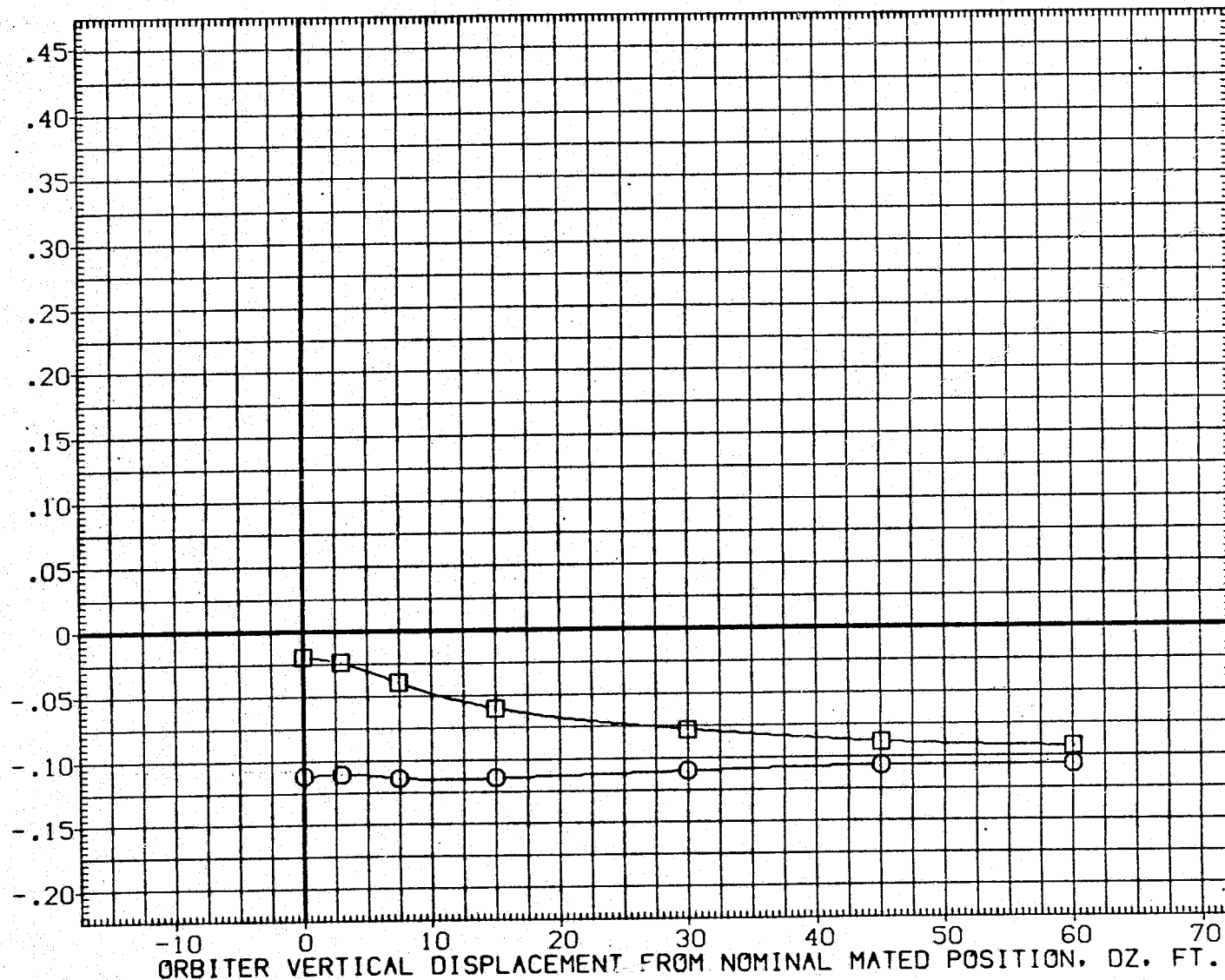


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	DY	-5.000
		DX	.000	ALPHAC	.000
					8.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

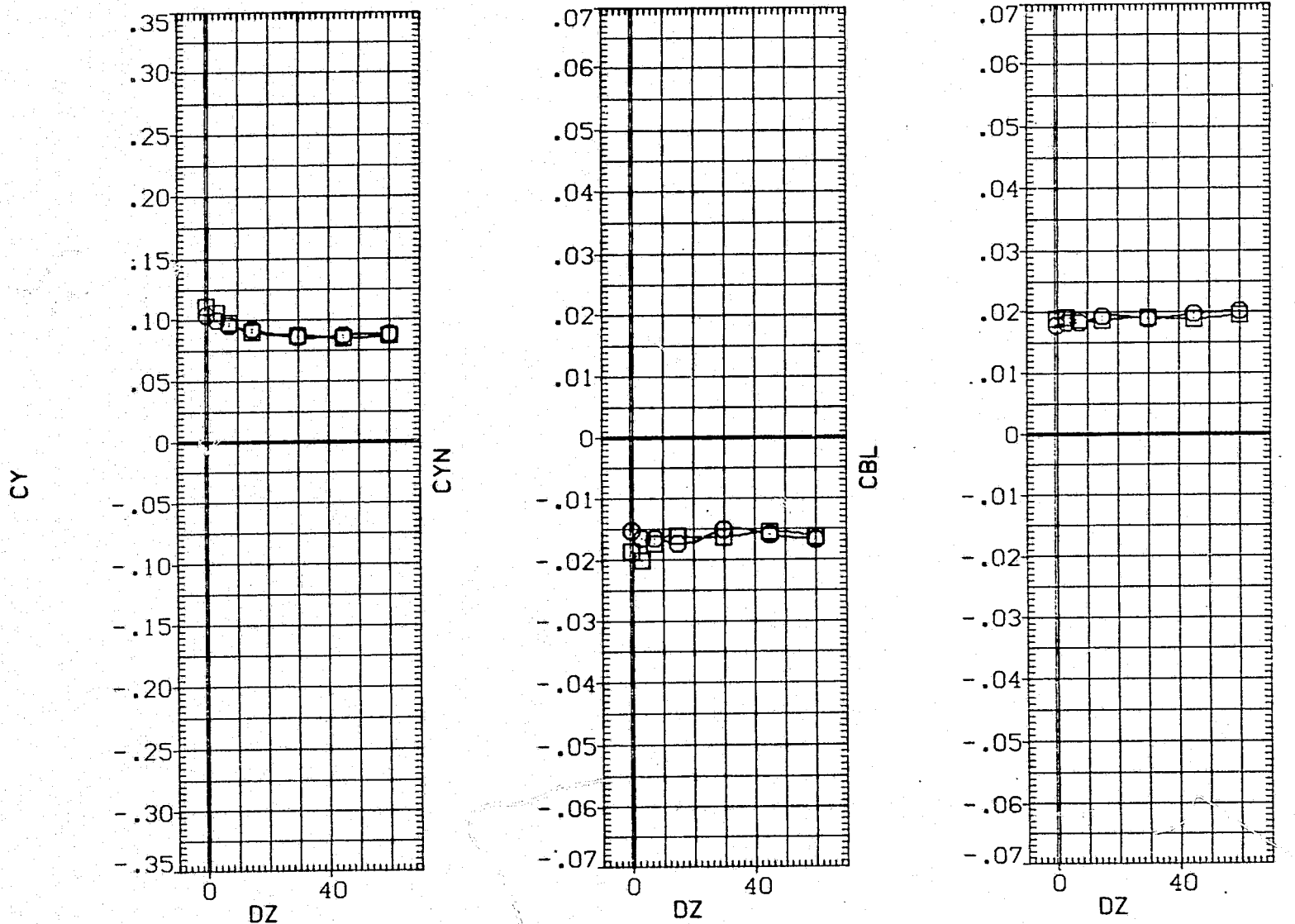


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-CB
○	10.000		.000	3.000
□	14.000	ELEVON	5.000	.600
		BETA0	.000	BETAC
		PHI	.000	DY
		DX	.000	ALPHAC
				8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

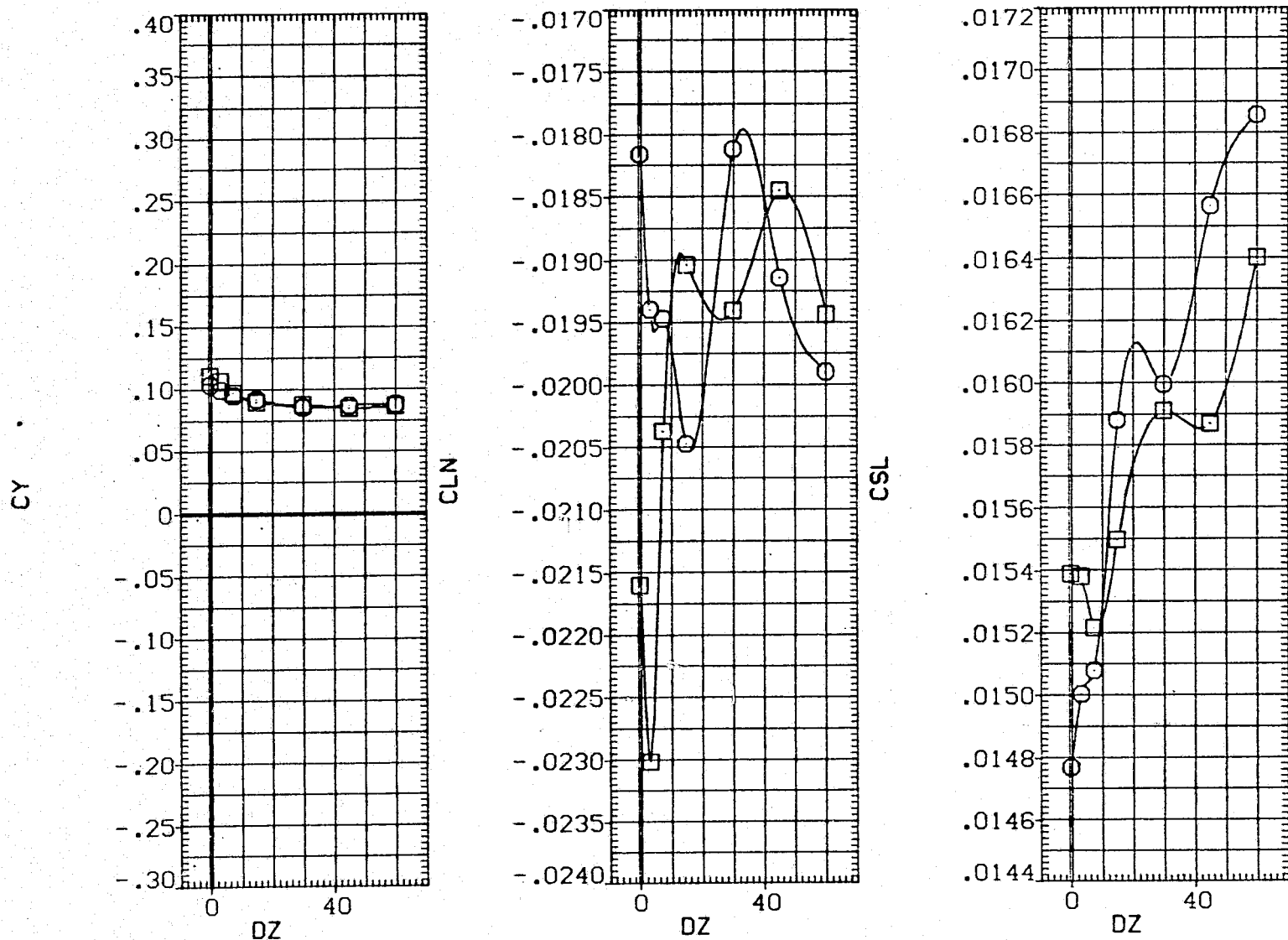


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	-5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.6000	IN.ZC
SCALE	.0300	

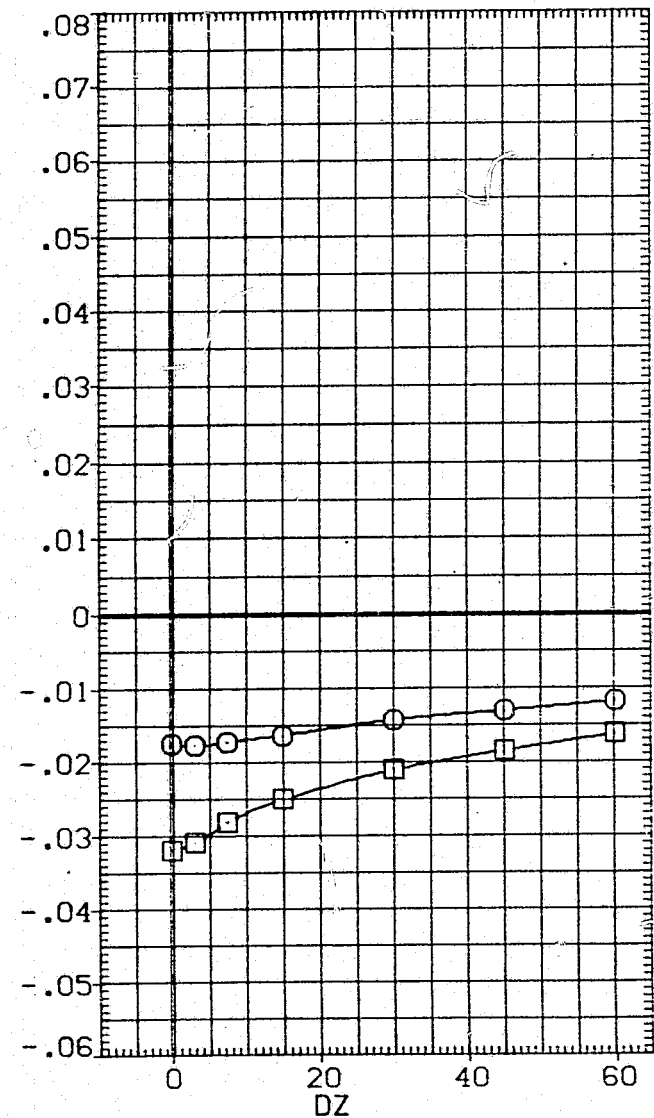
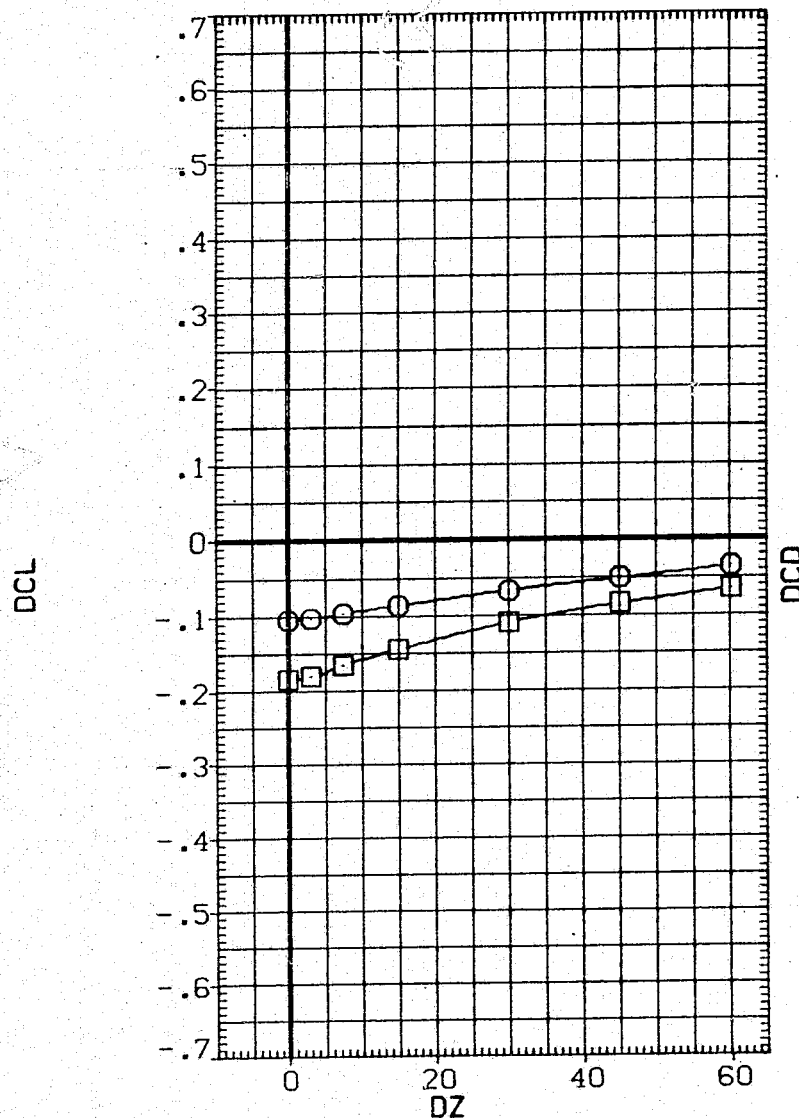


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000 BETAC

.000 ELV-OB

5.000 MACH

.000 DX

.000 BETA0

-5.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

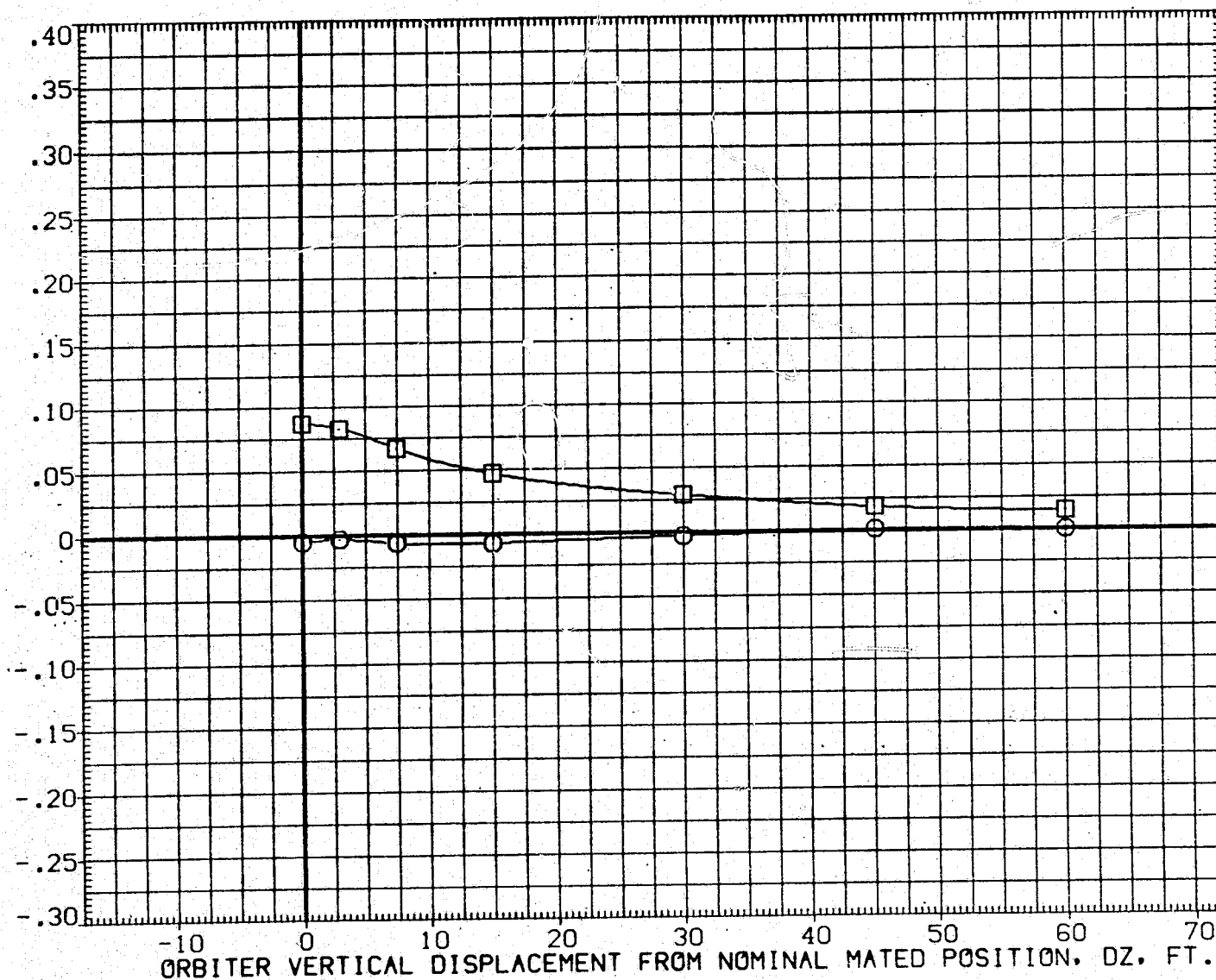


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC -5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX .000
		DY .000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

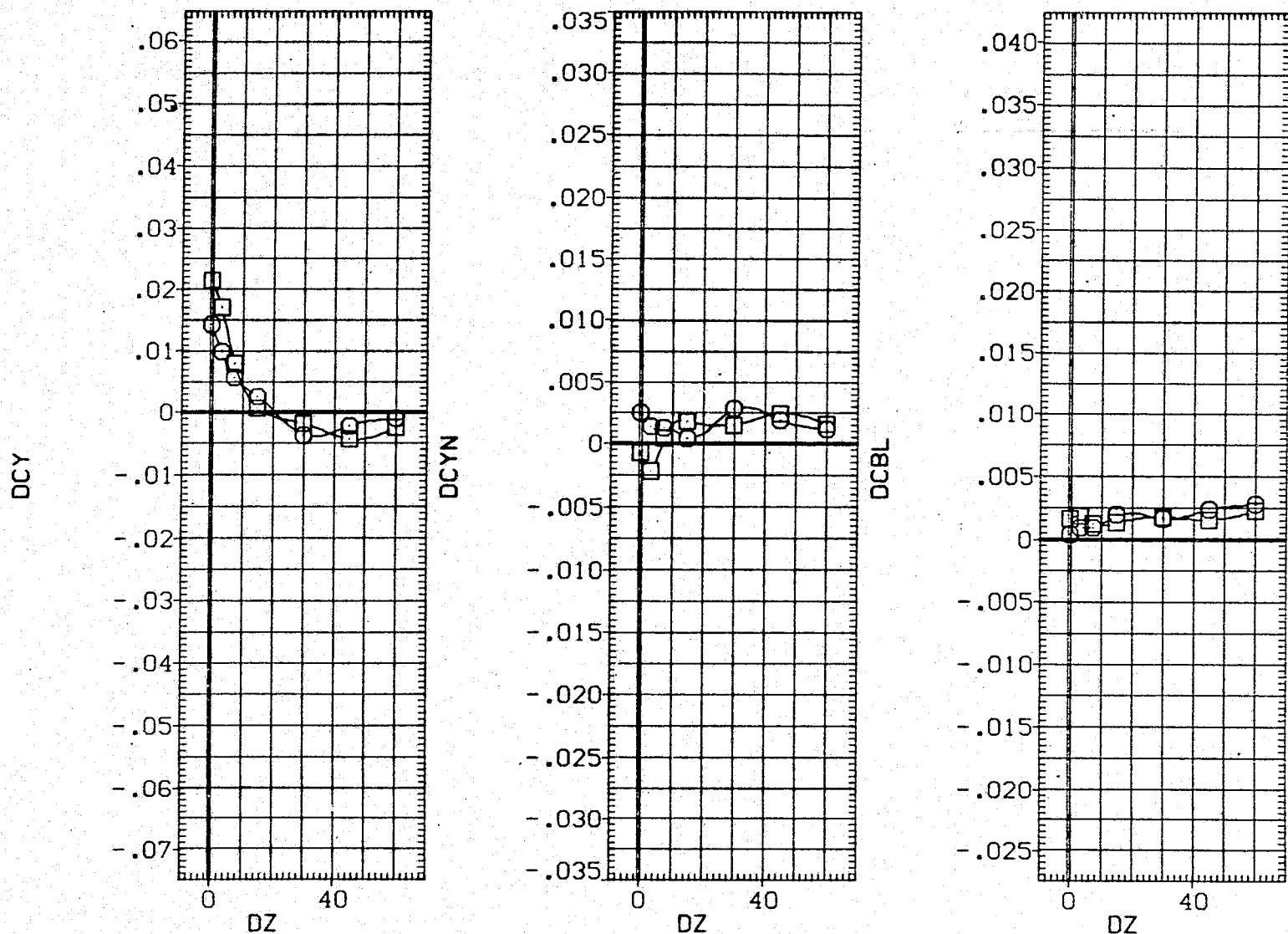


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES			
	10.000	14.000	ALPHAC	8.000	BETAC	-5.000
			ELV-1B	.000	ELV-0B	3.000
			ELEVON	5.000	MACH	.600
			PHI	.000	DX	.000
			DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

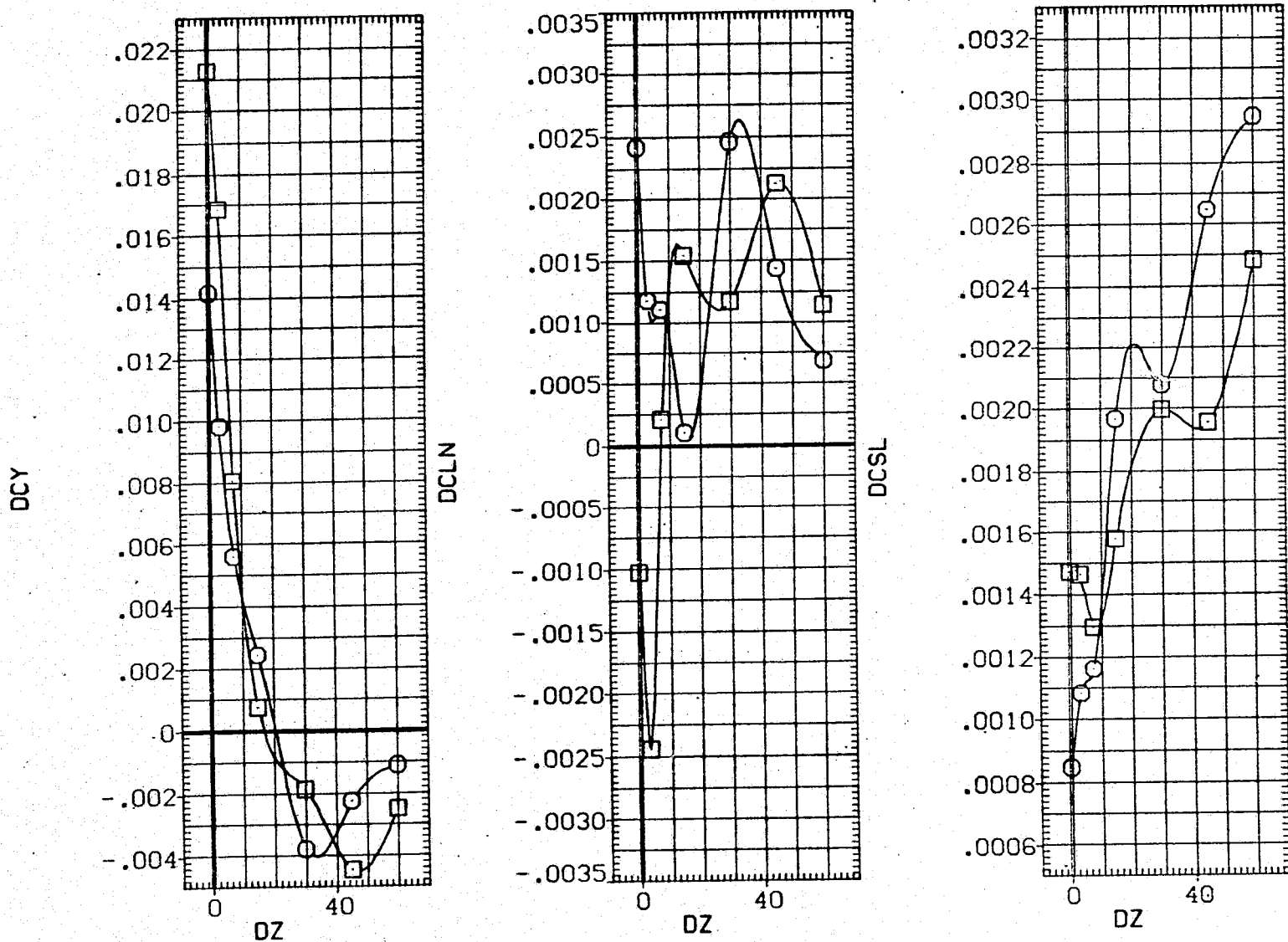


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN063)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

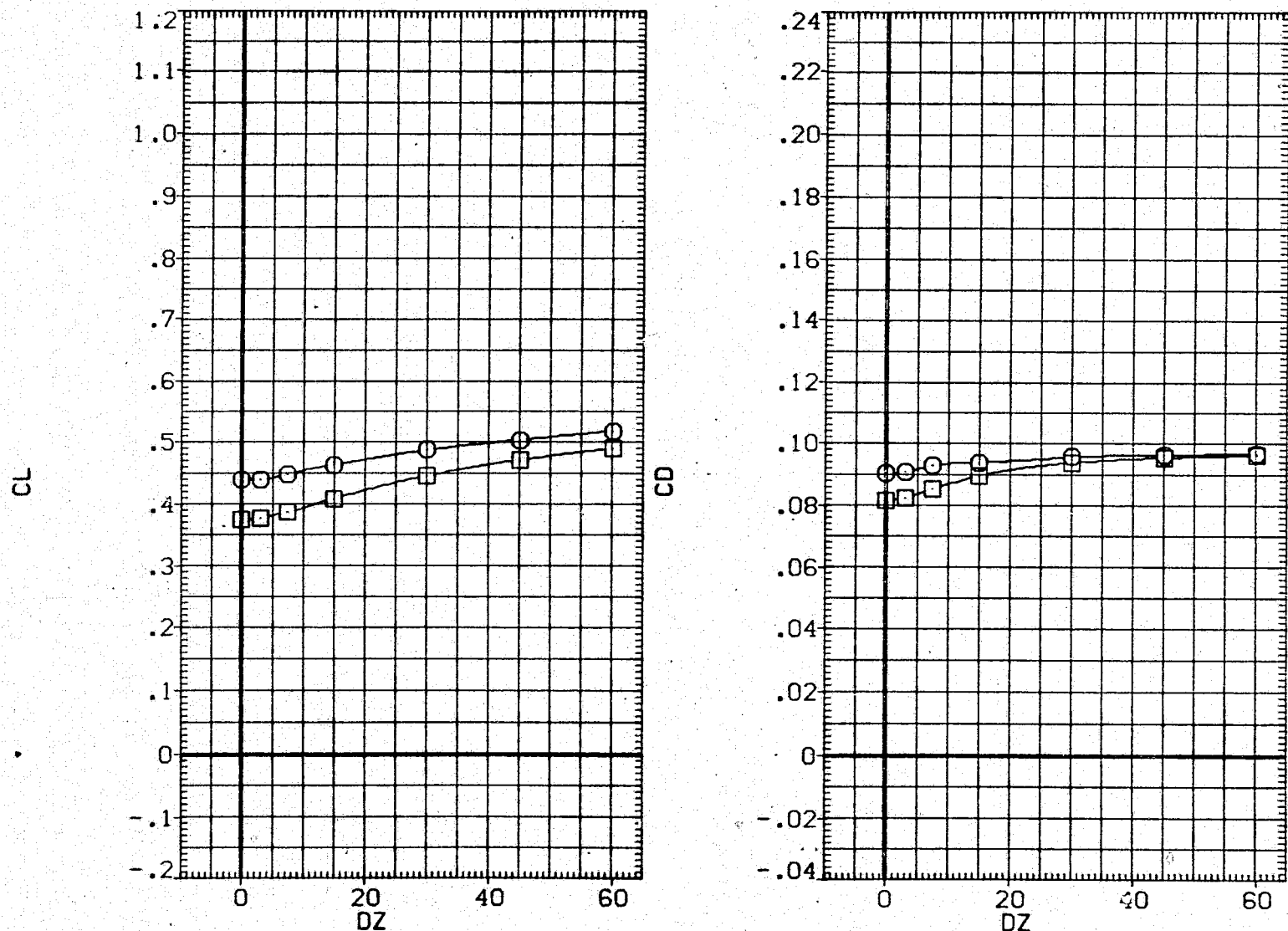


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEV0	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

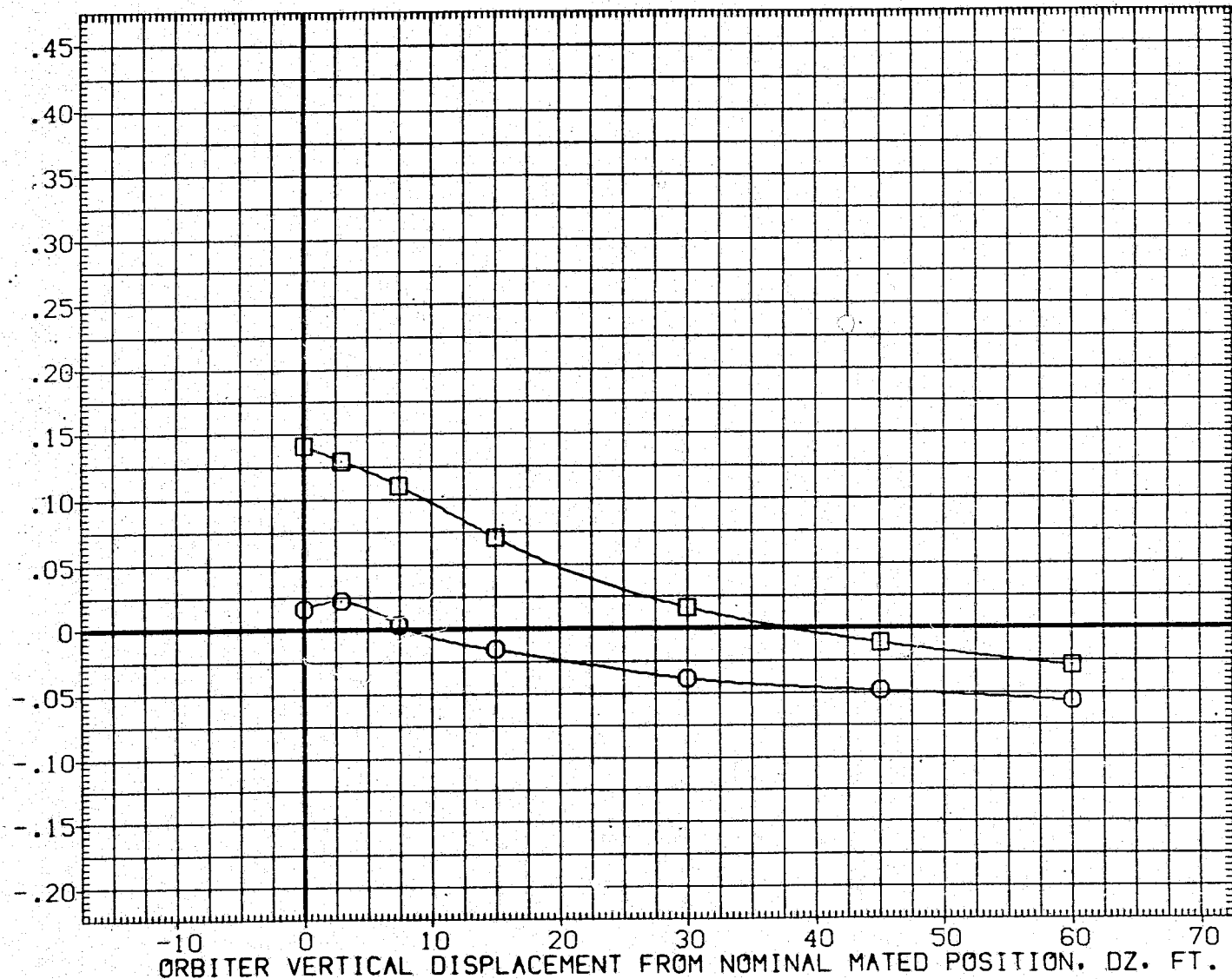


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN063)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.XC
YMRF	.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

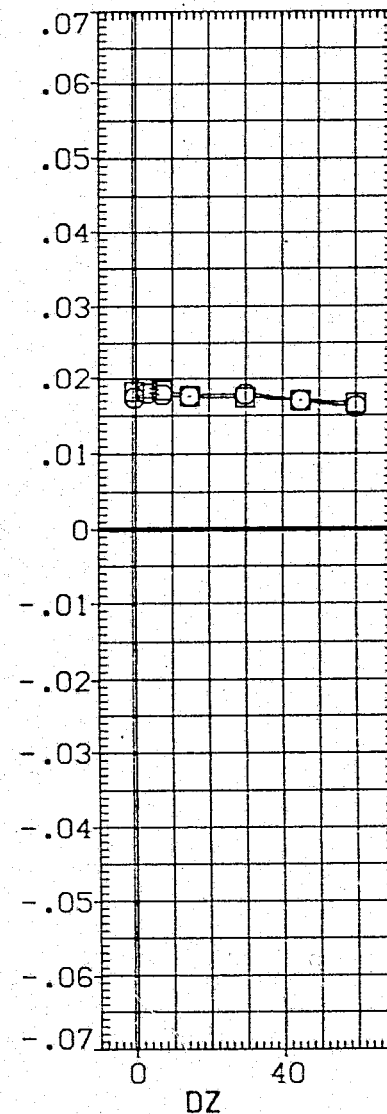
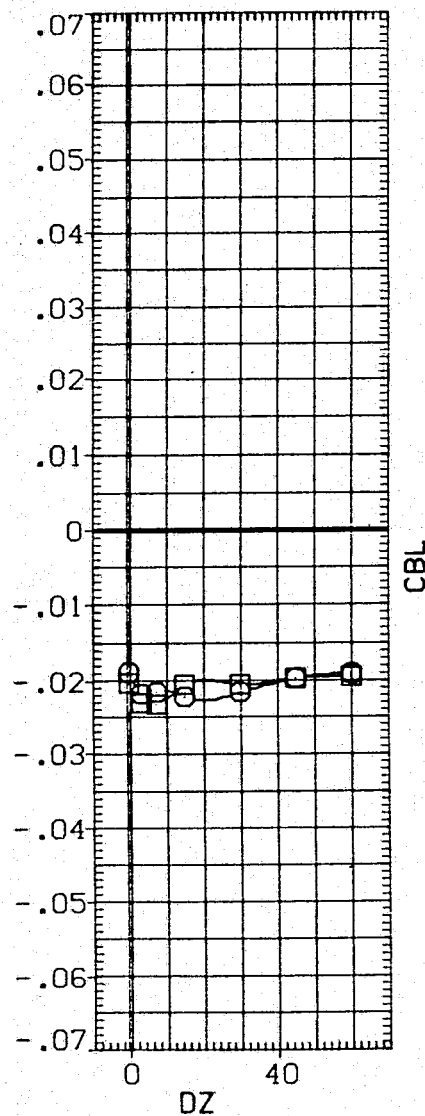
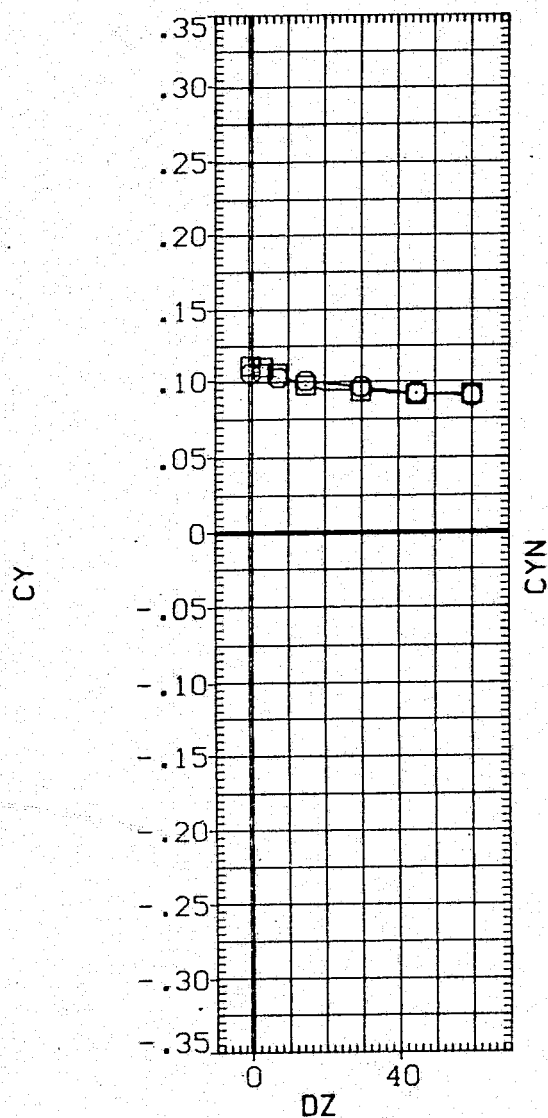


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

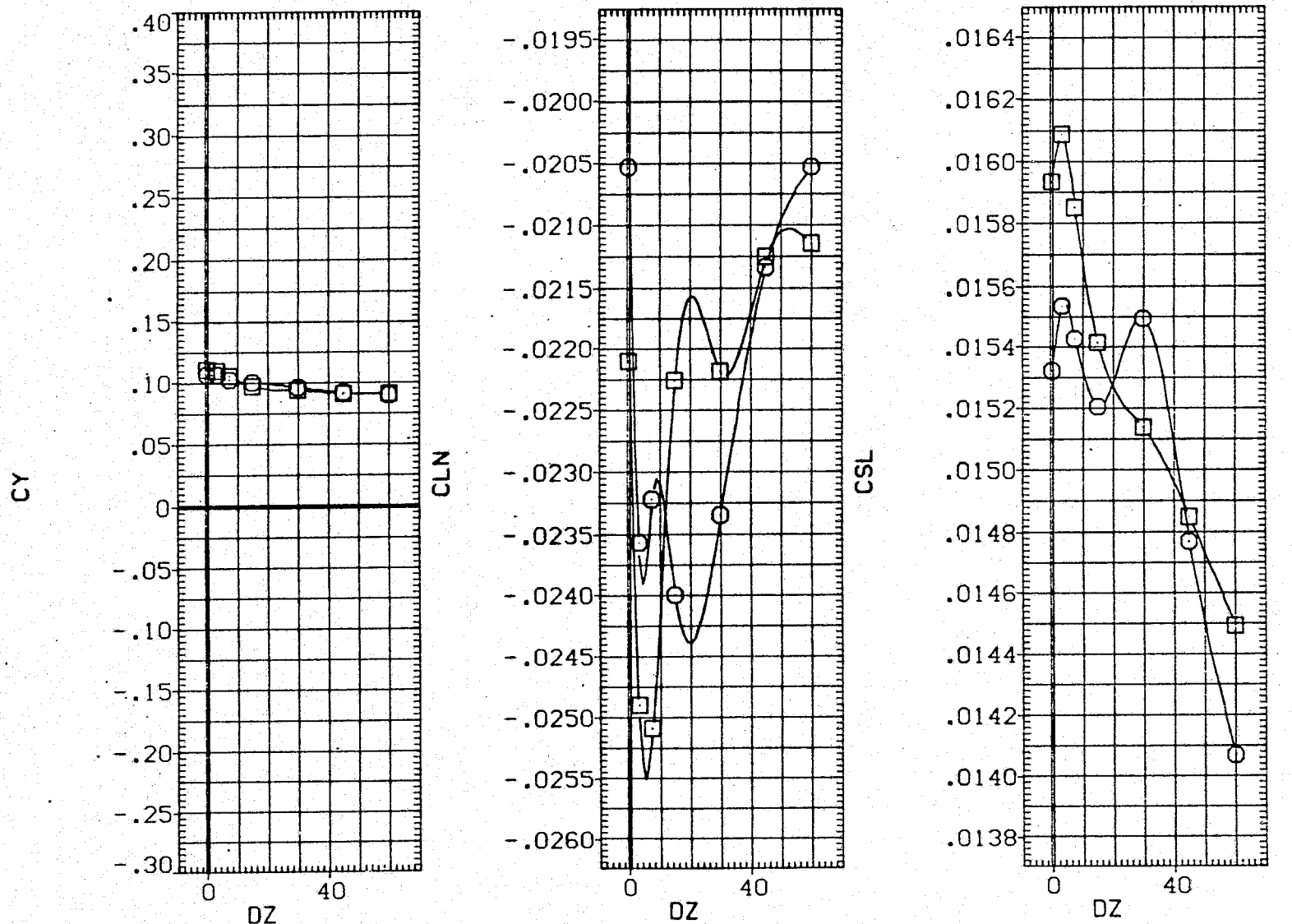


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC -5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY .000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

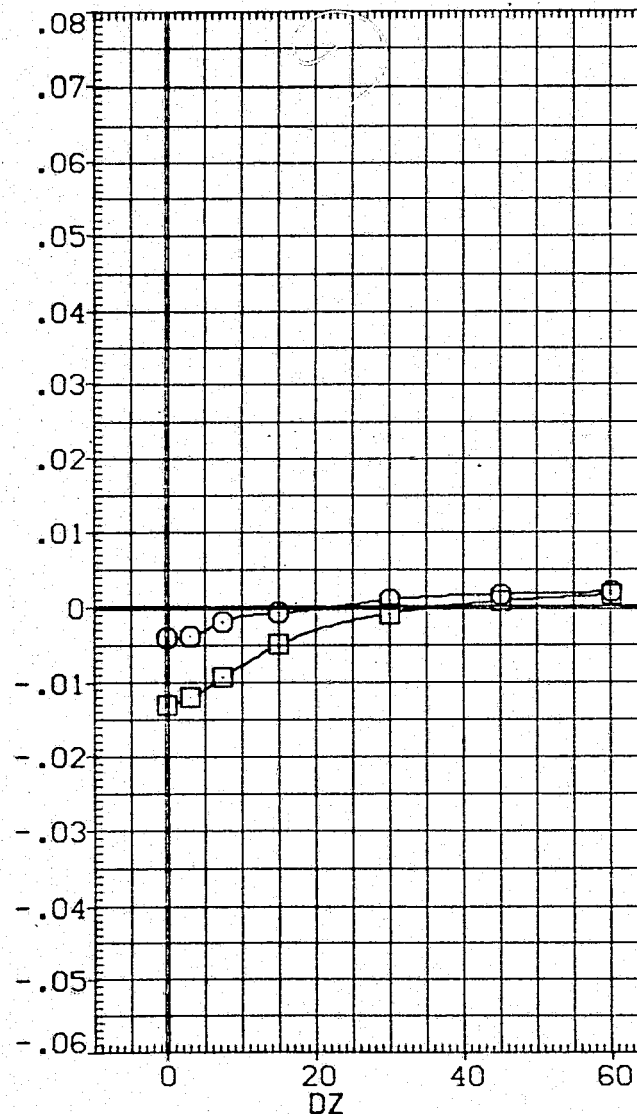
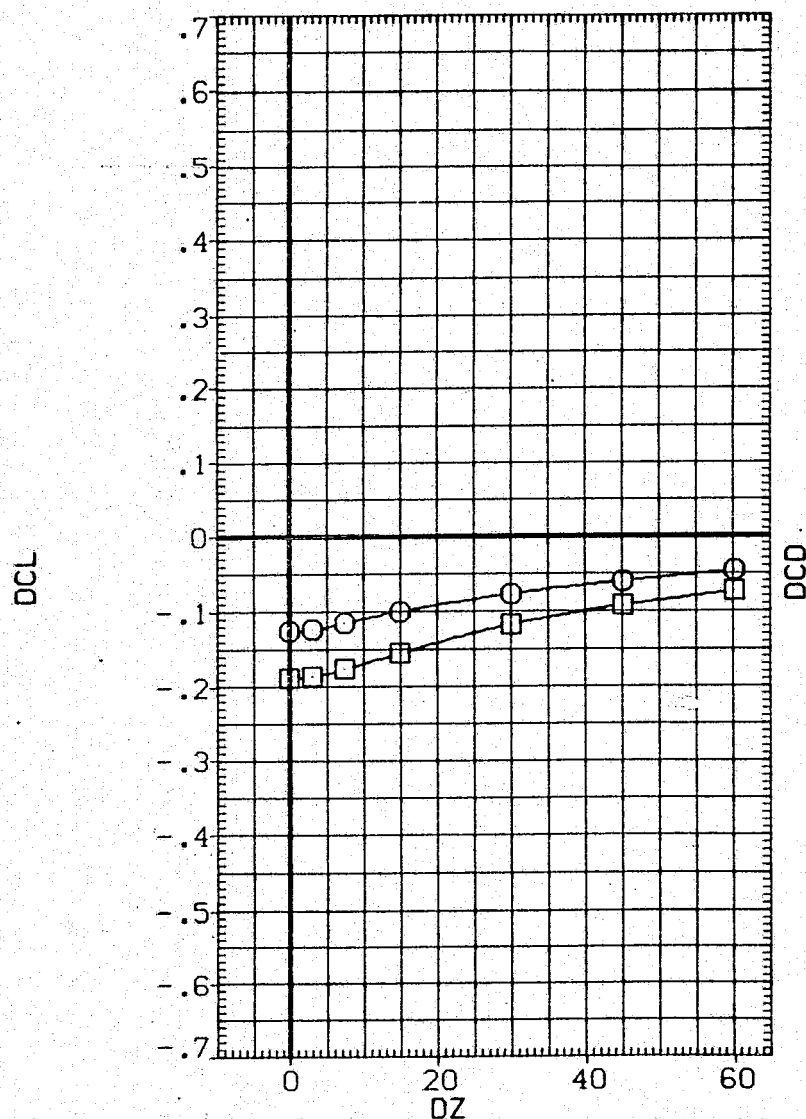


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

.000

.000

BETAC

ELV-0B

MACH

DX

BETA0

-5.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

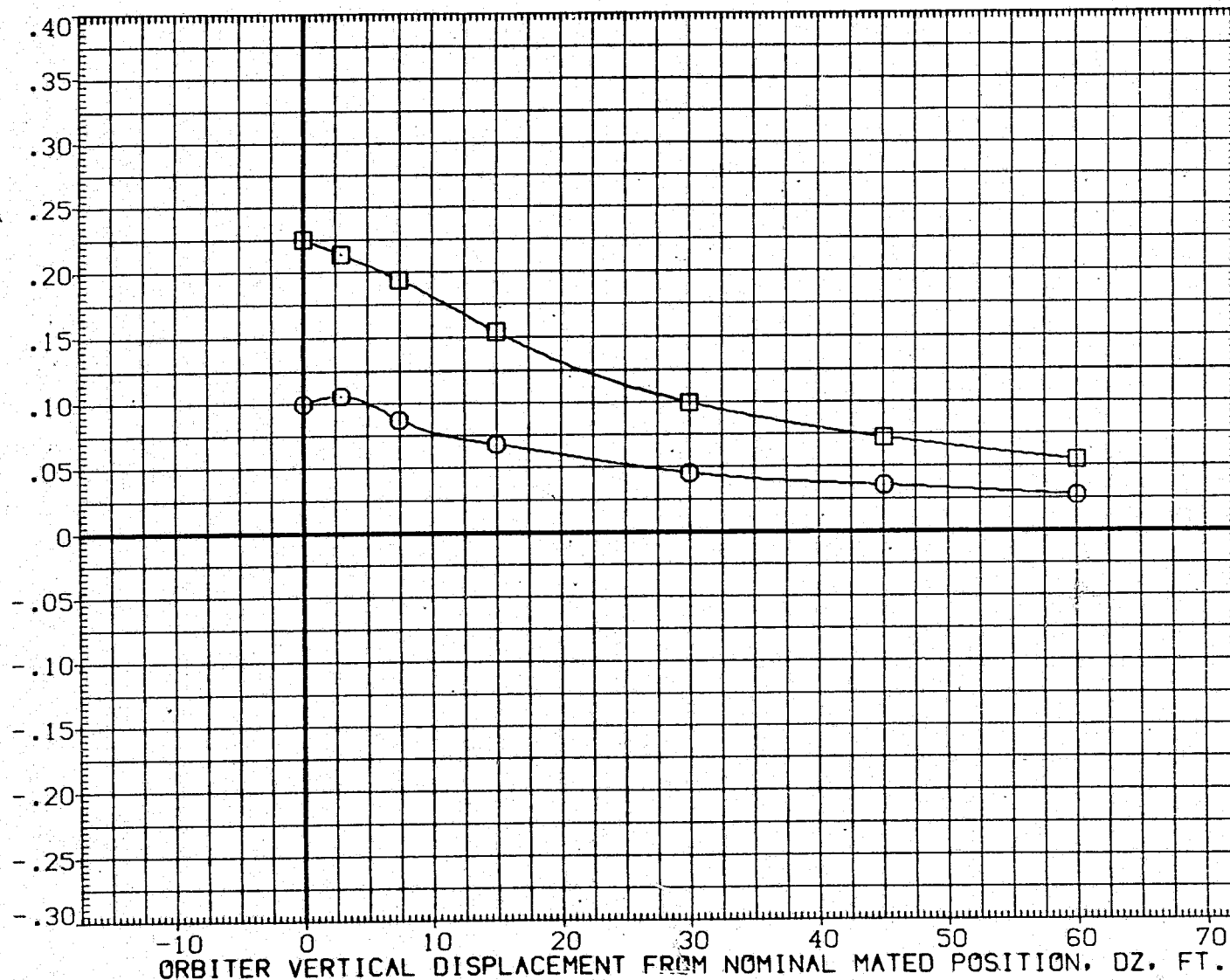


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0
10.000
14.000

ALPHAC
ELV-IB
ELEVON
PHI
DY

PARAMETRIC VALUES

4.000 BETAC
.000 ELV-OB
5.000 MACH
.000 DX
.000 BETA0

-5.000
3.000
.600
10.000
.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

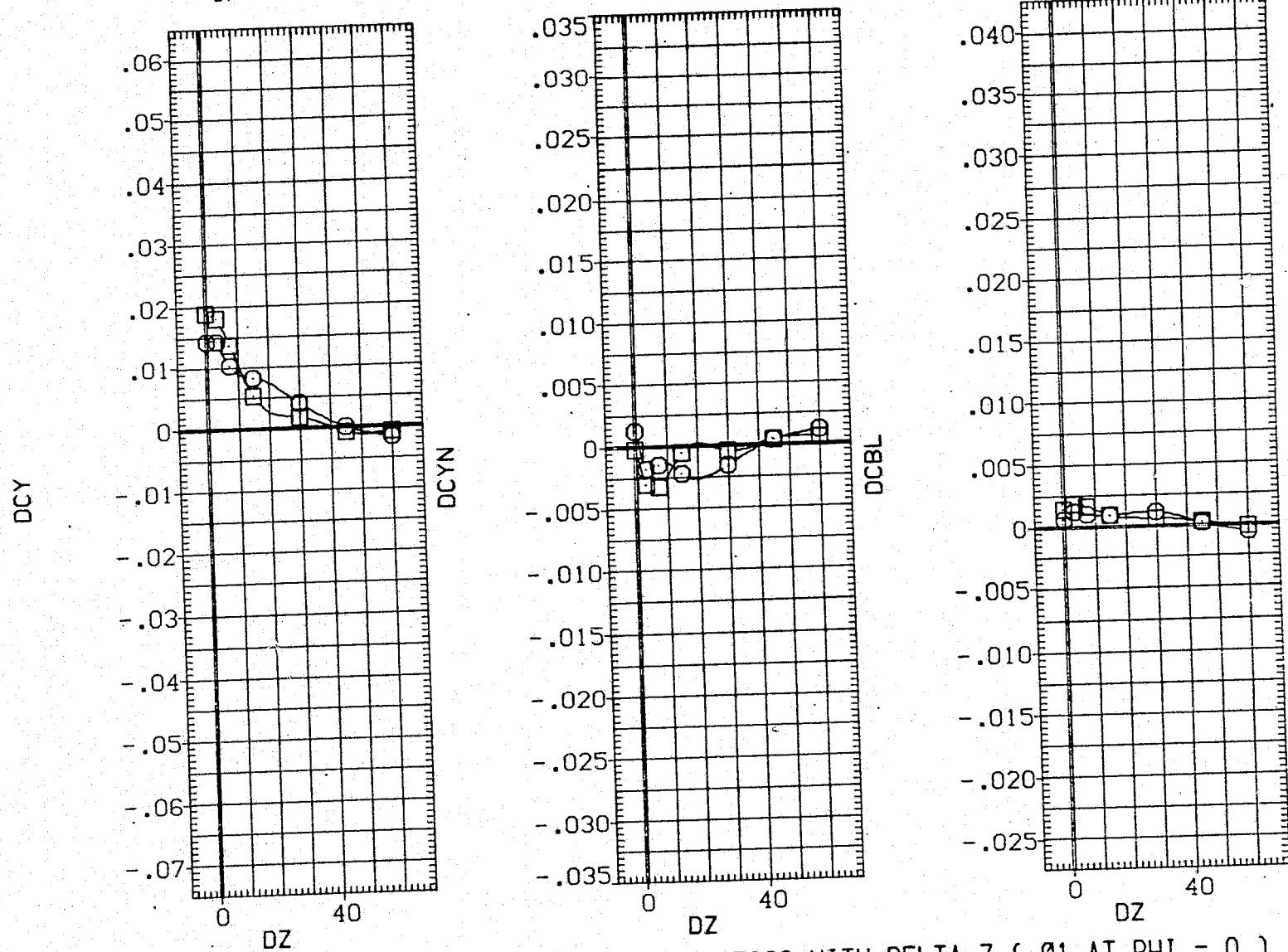


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

BETAC

ELV-OB

MACH

DX

BETA0

-5.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

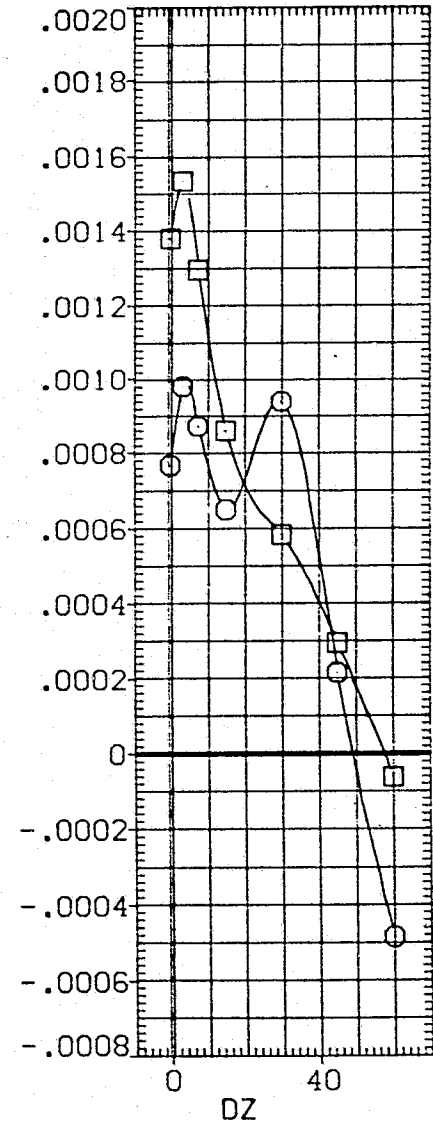
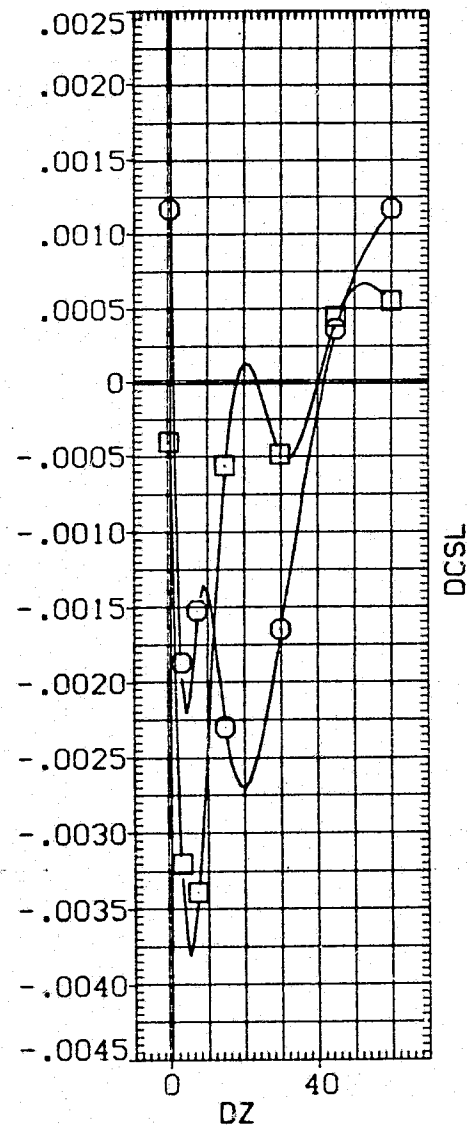
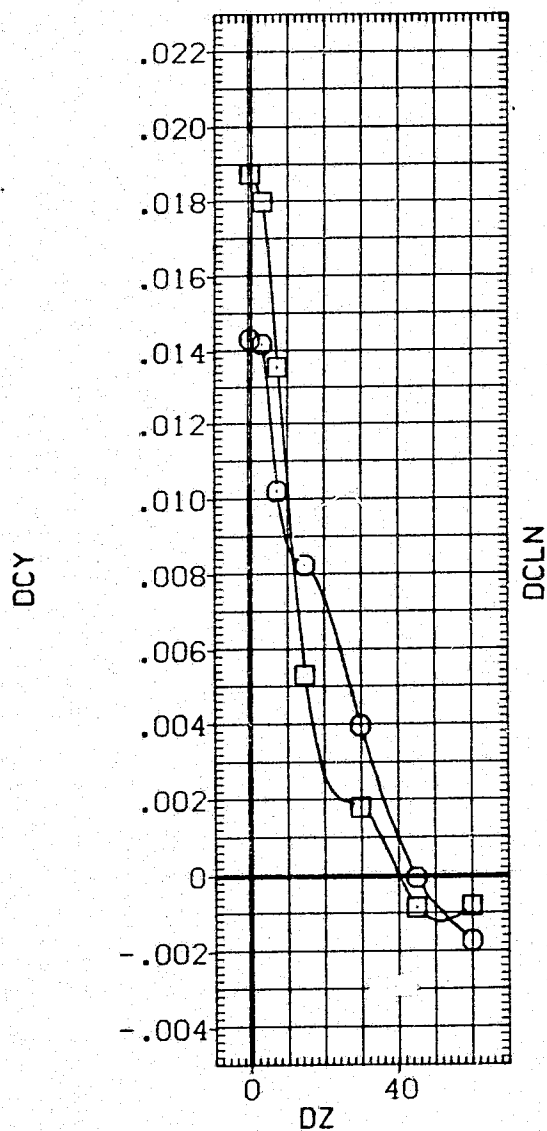


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA(MGN066)

SYMBOL



ALPHA0

10.000

14.000

ELV-1B

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

.000

10.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

-5.000

.000

8.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

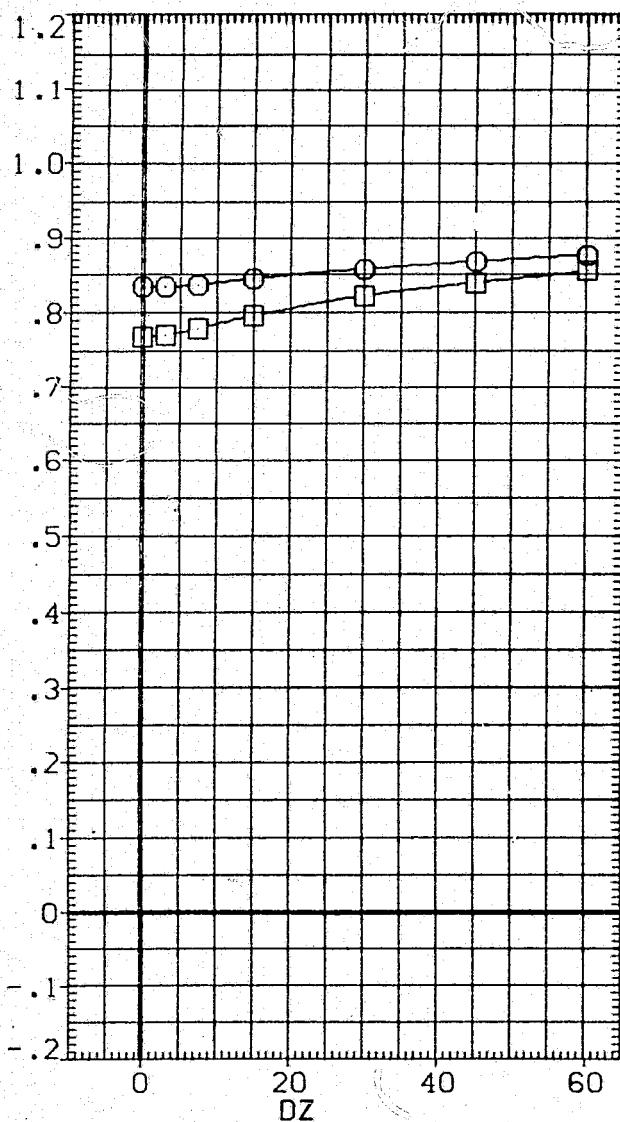
XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

CL



CD

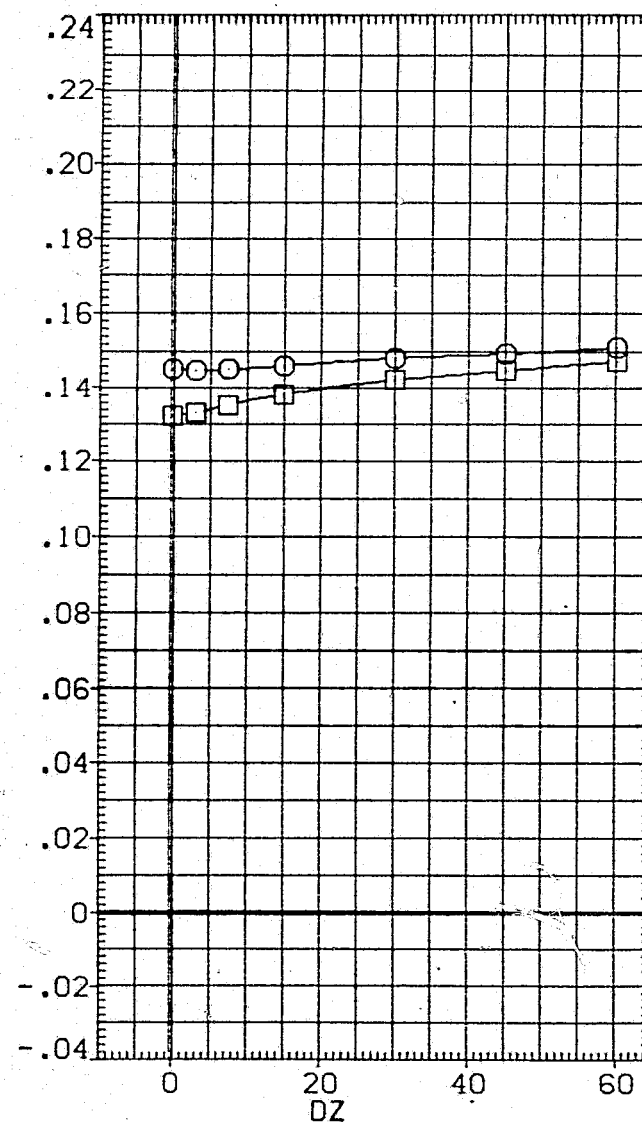


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

□
○

ALPHA0

10.000

ELV-1B

PARAMETRIC VALUES

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

.000

DY

.000

DX

10.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

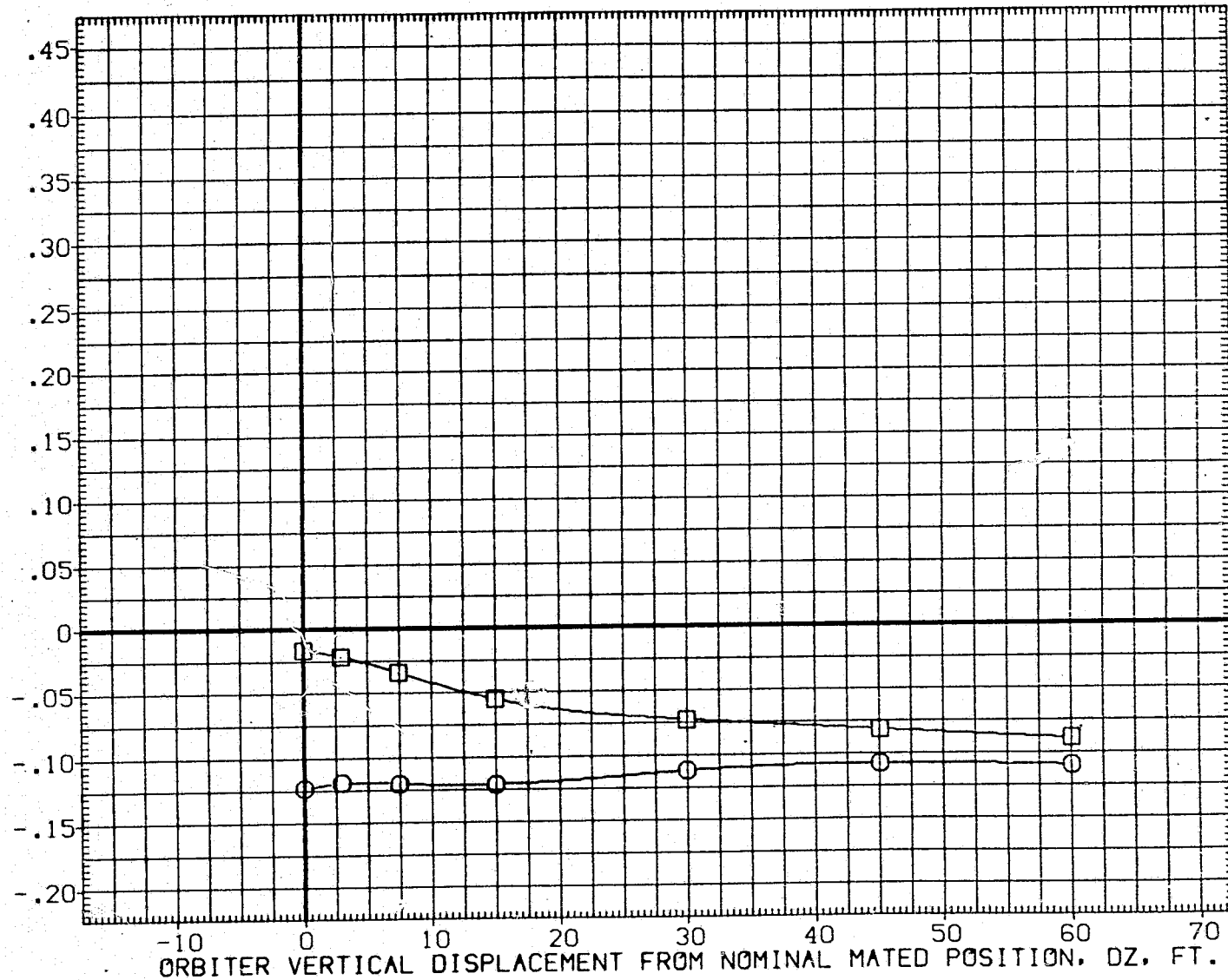


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGNO66)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000		.000	3.000
□	14.000	ELEVON	5.000	.600
		BETA0	.000	BETAC -5.000
		PHI	.000	DY .000
		DX	10.000	ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

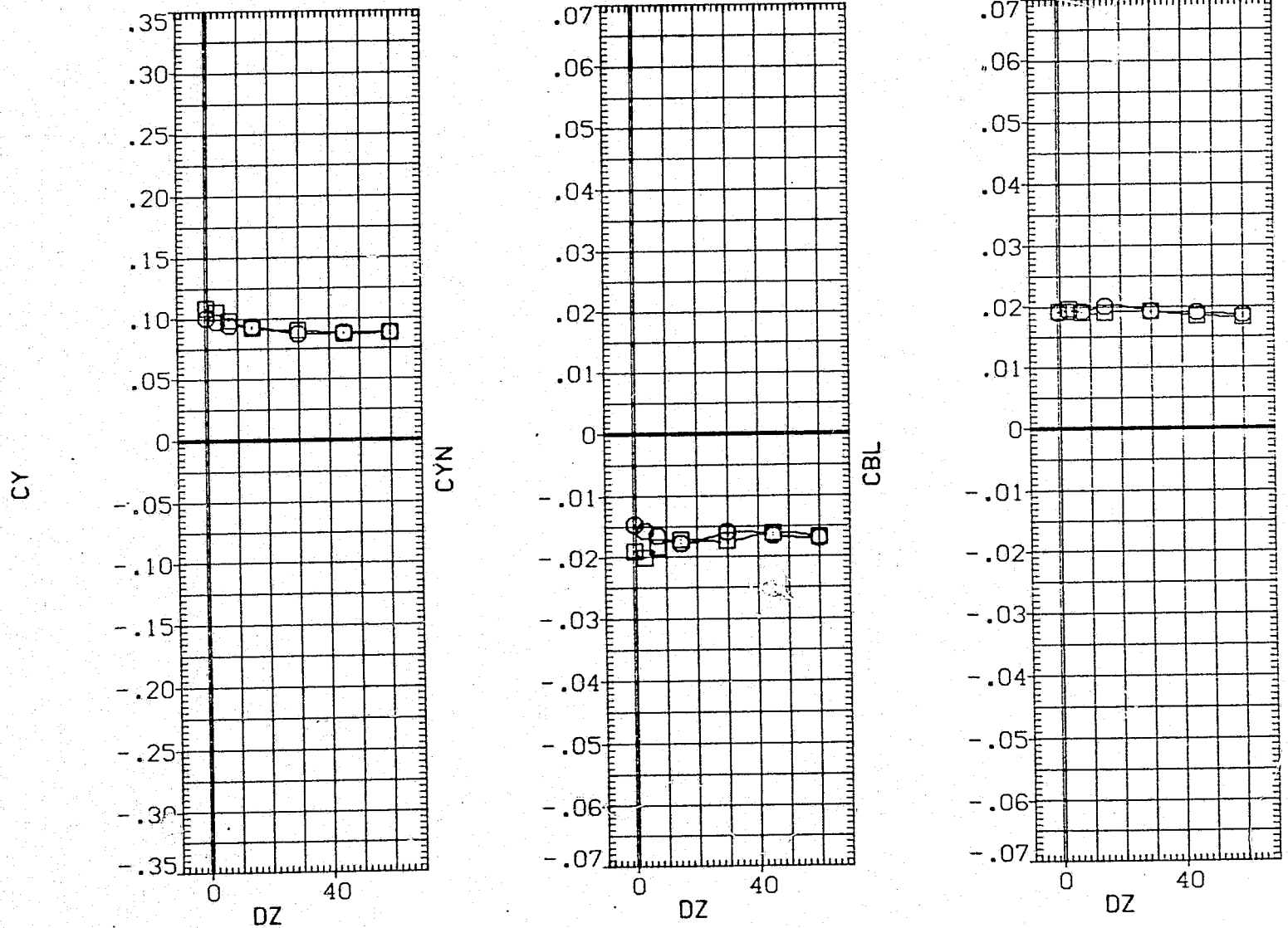


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

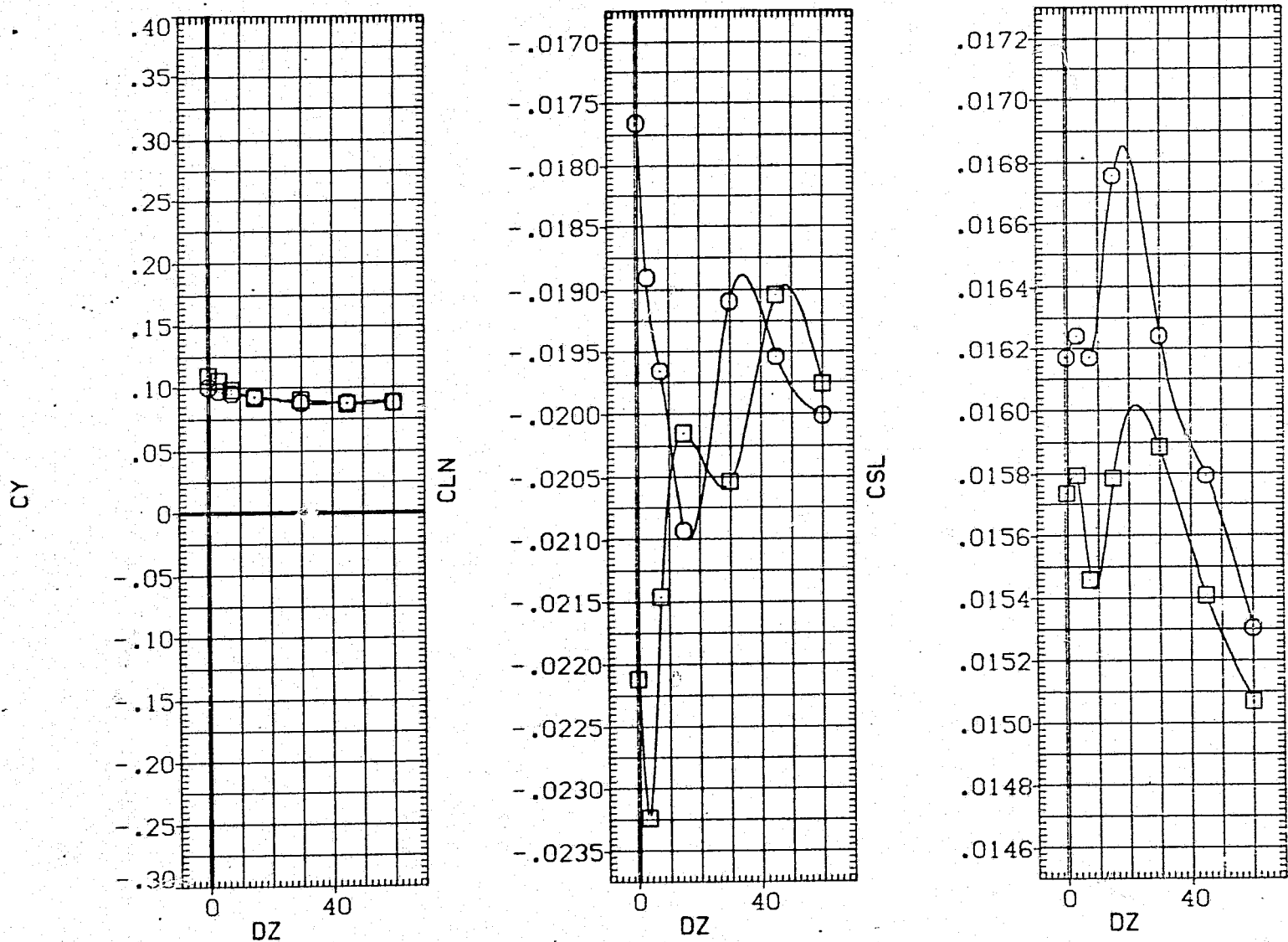


FIG. 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	-5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

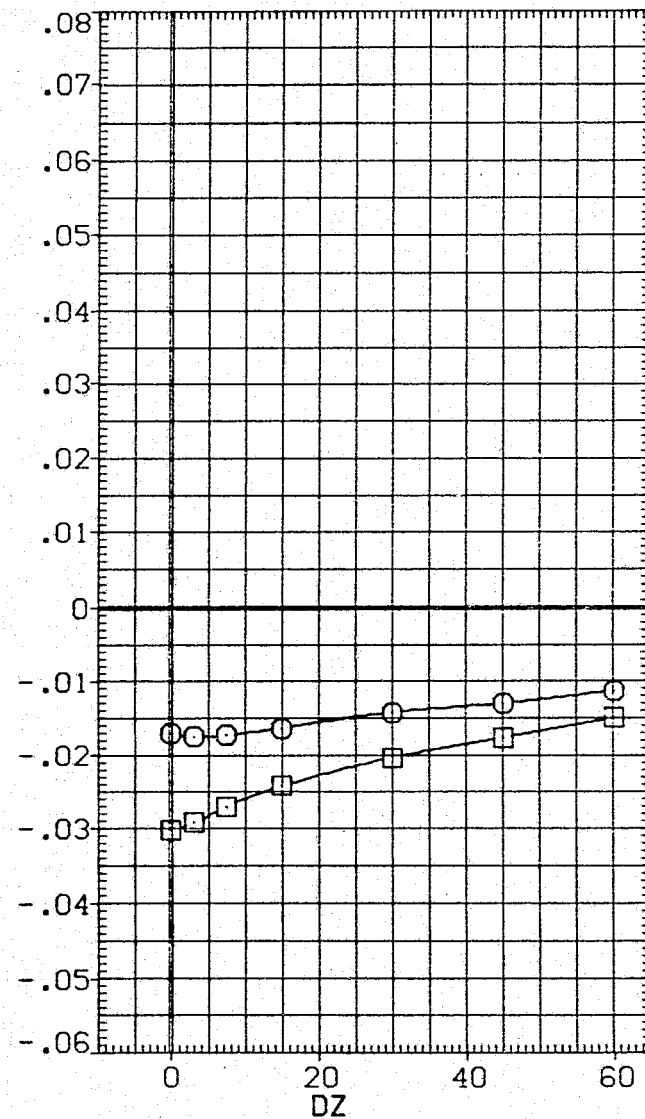
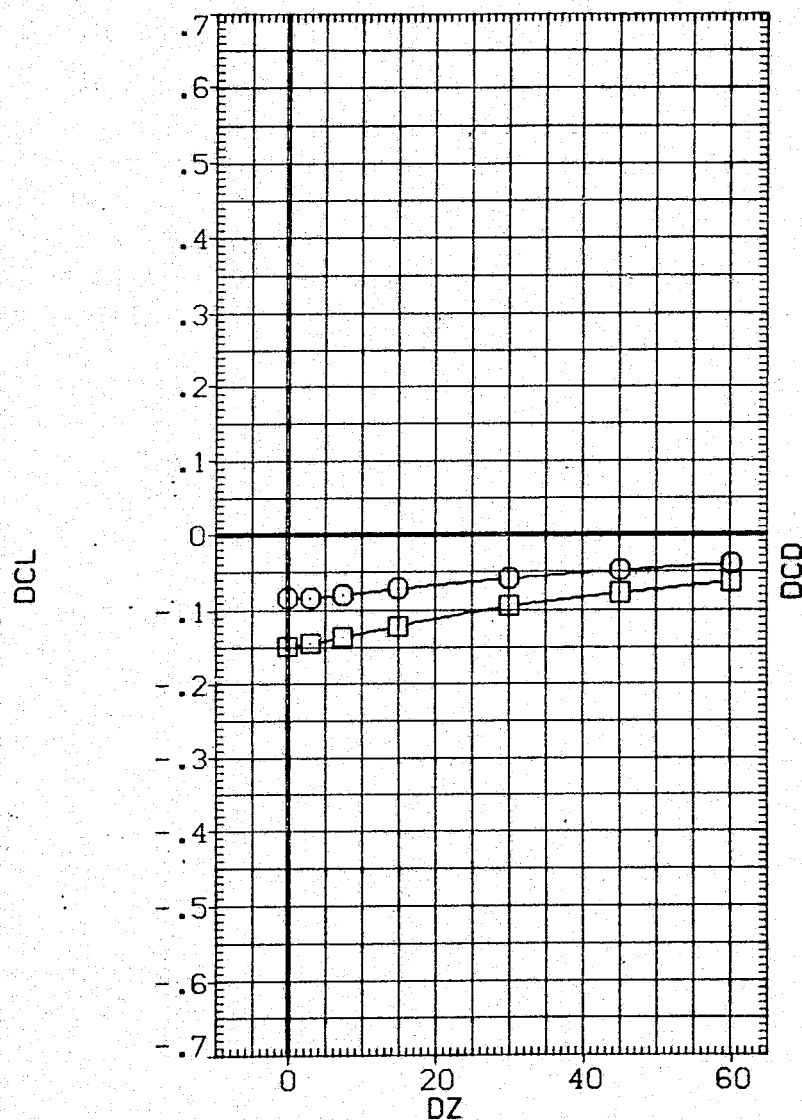


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000

ALPHAC

PARAMETRIC VALUES

8.000

BETAC

-5.000

ELV-IB

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

PHI

.000

DX

10.000

DY

.000

BETA0

.000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

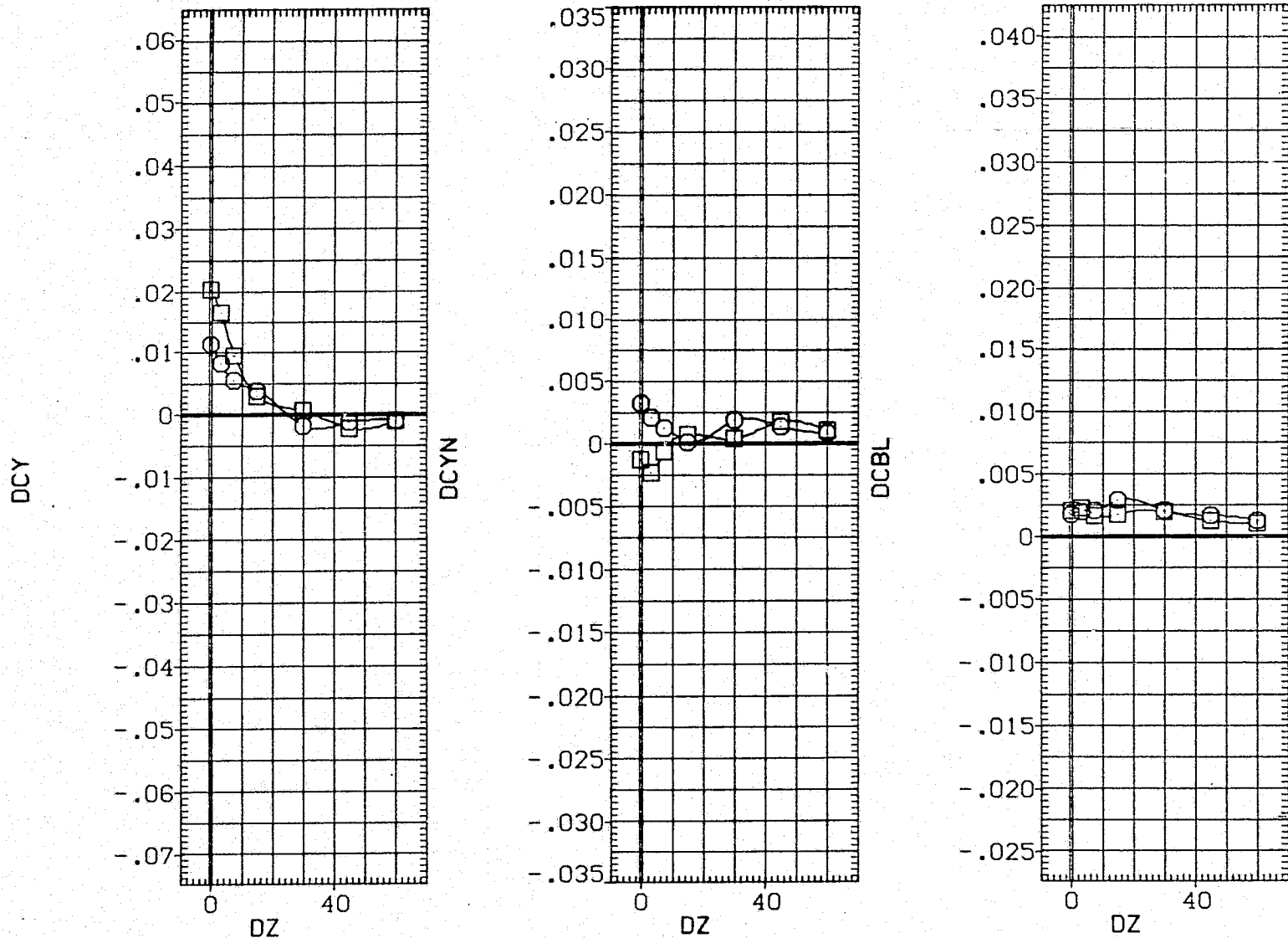


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA-Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	8.000	BETAC	-5.000
○	14.000	ELV-1B	.000	ELV-0B	3.000
□		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

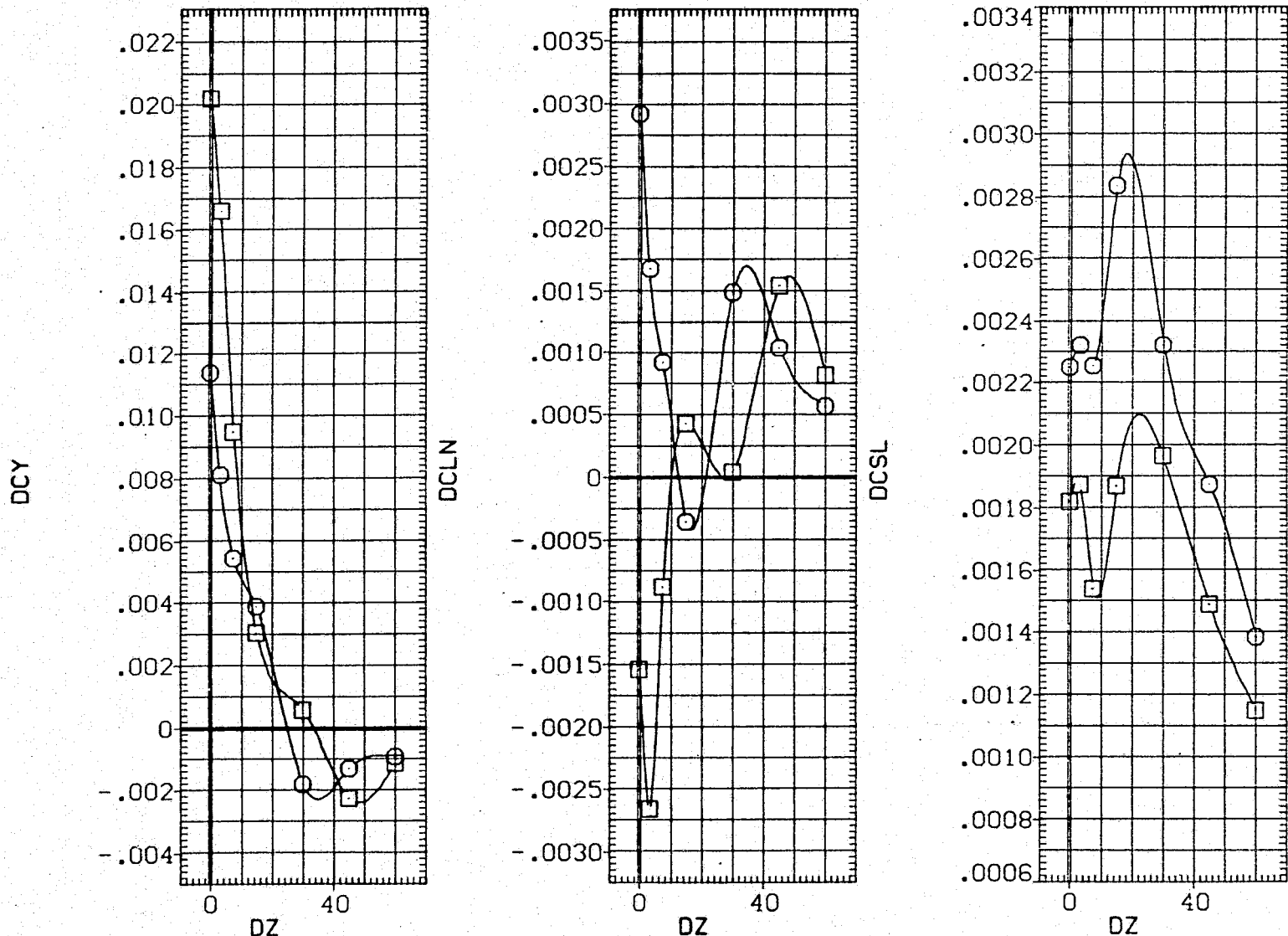


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN064)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	PHI	.000
		DY	.000	BETAC	-5.000
		DX	20.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

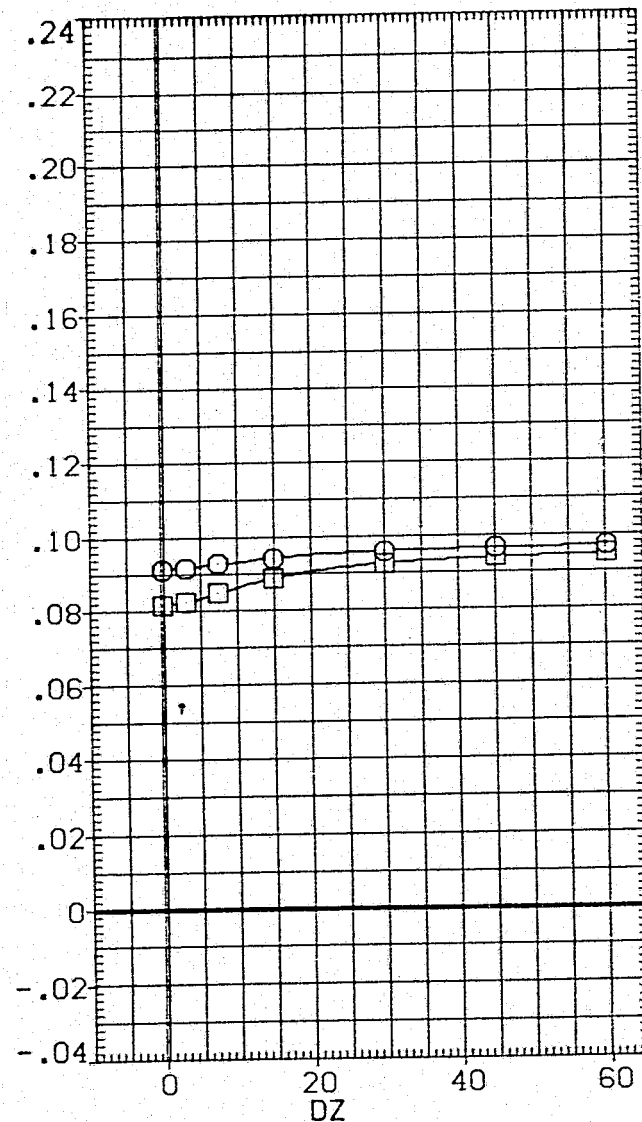
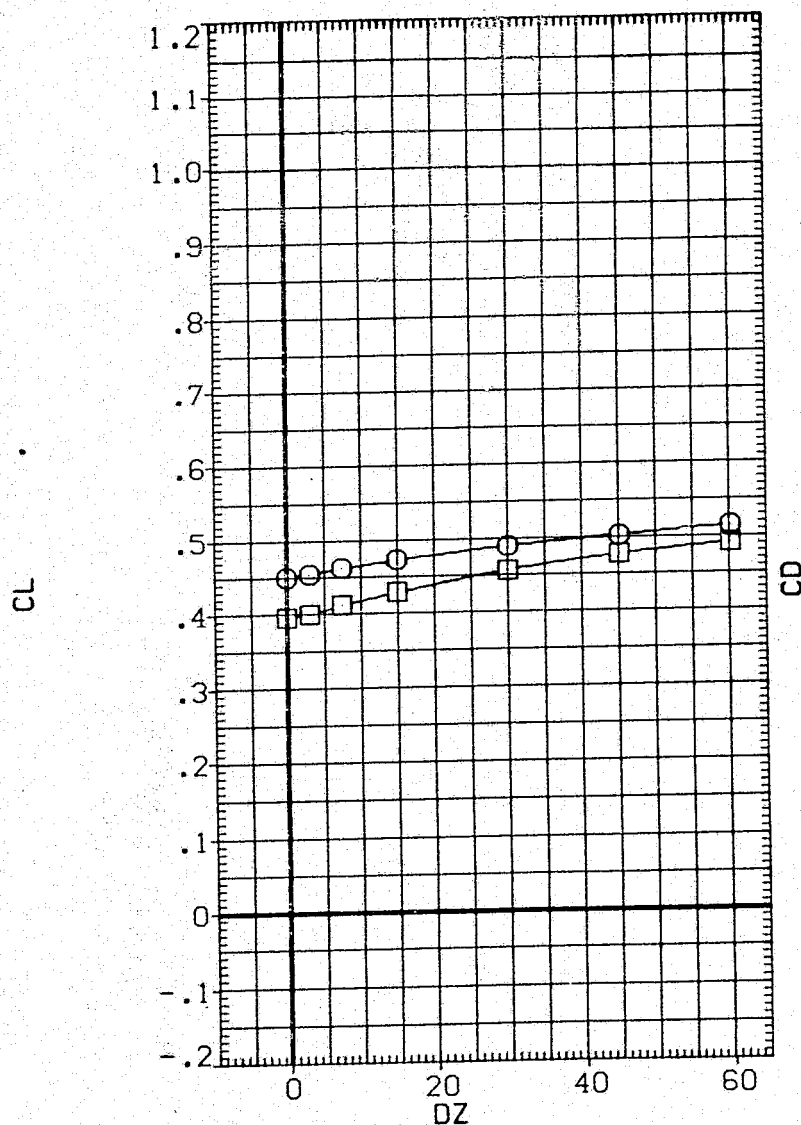


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 PHI .000
		DY .000 BETAC -5.000
		DX 20.000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

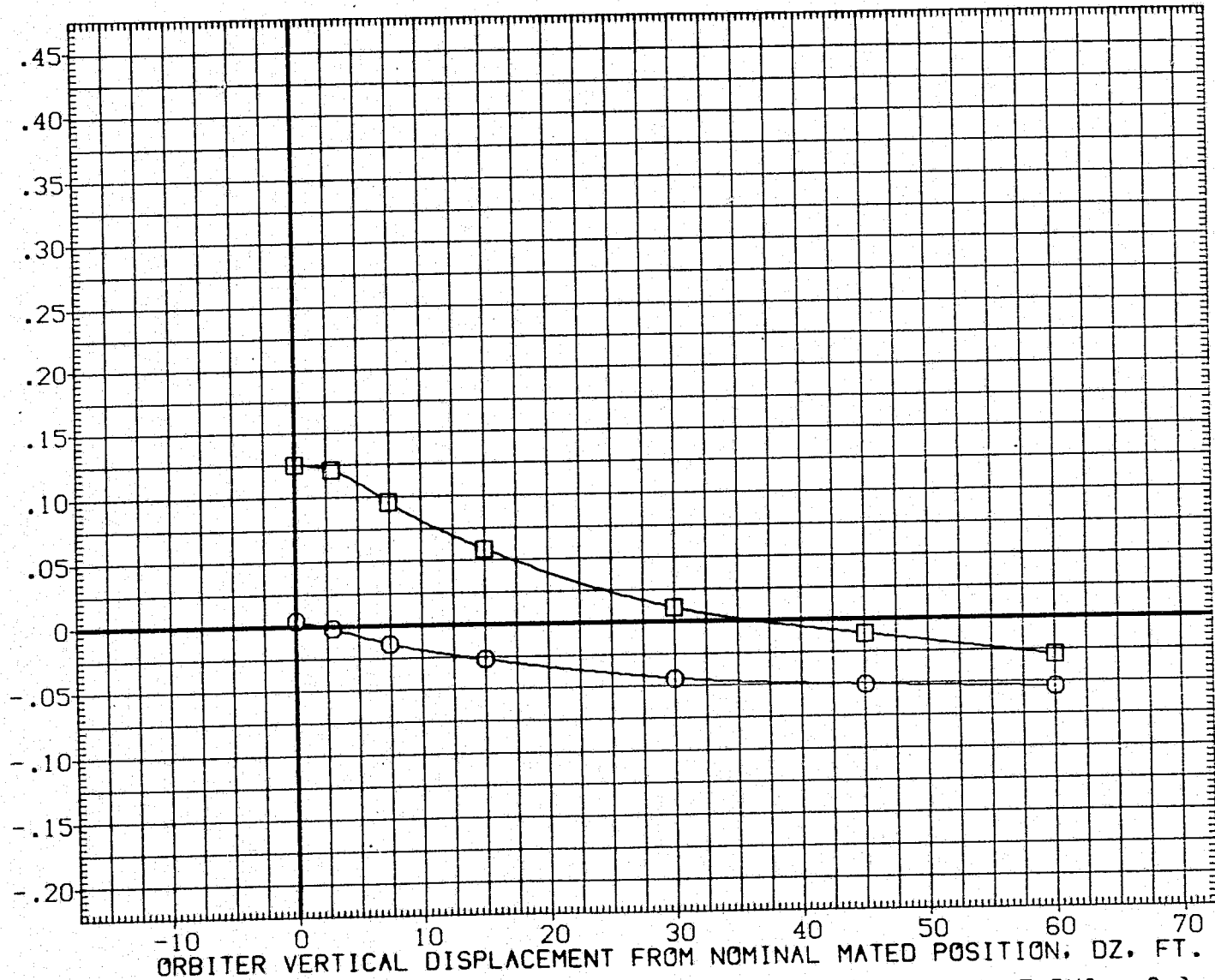


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	PHI	.600
		DY	.000	BETAC	.000
		DX	.000	ALPHAC	-5.000
			20.000		4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

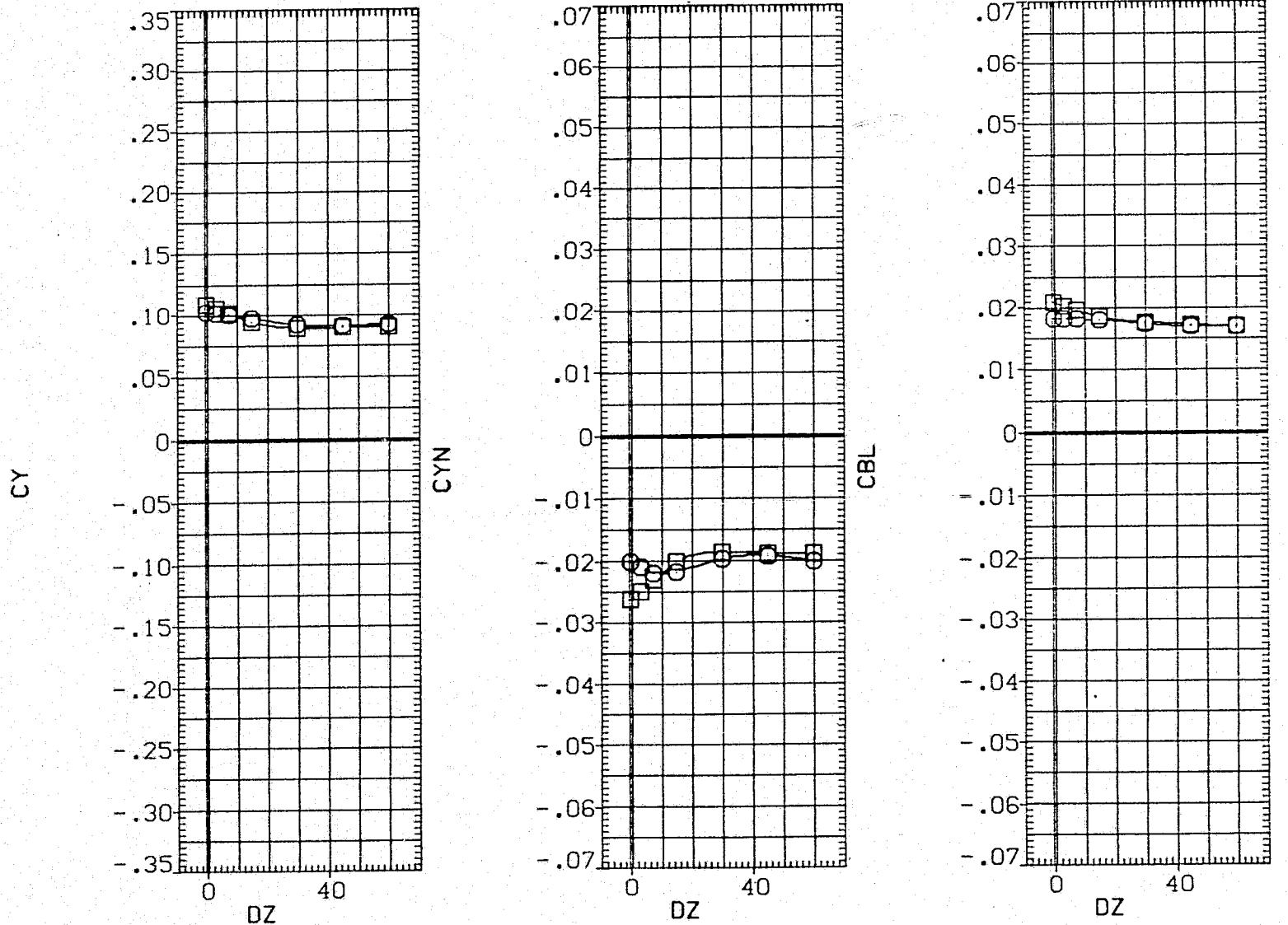


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	PHI	.600
		DY	.000	BETAC	.000
		DX	20.000	ALPHAC	-5.000
					4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

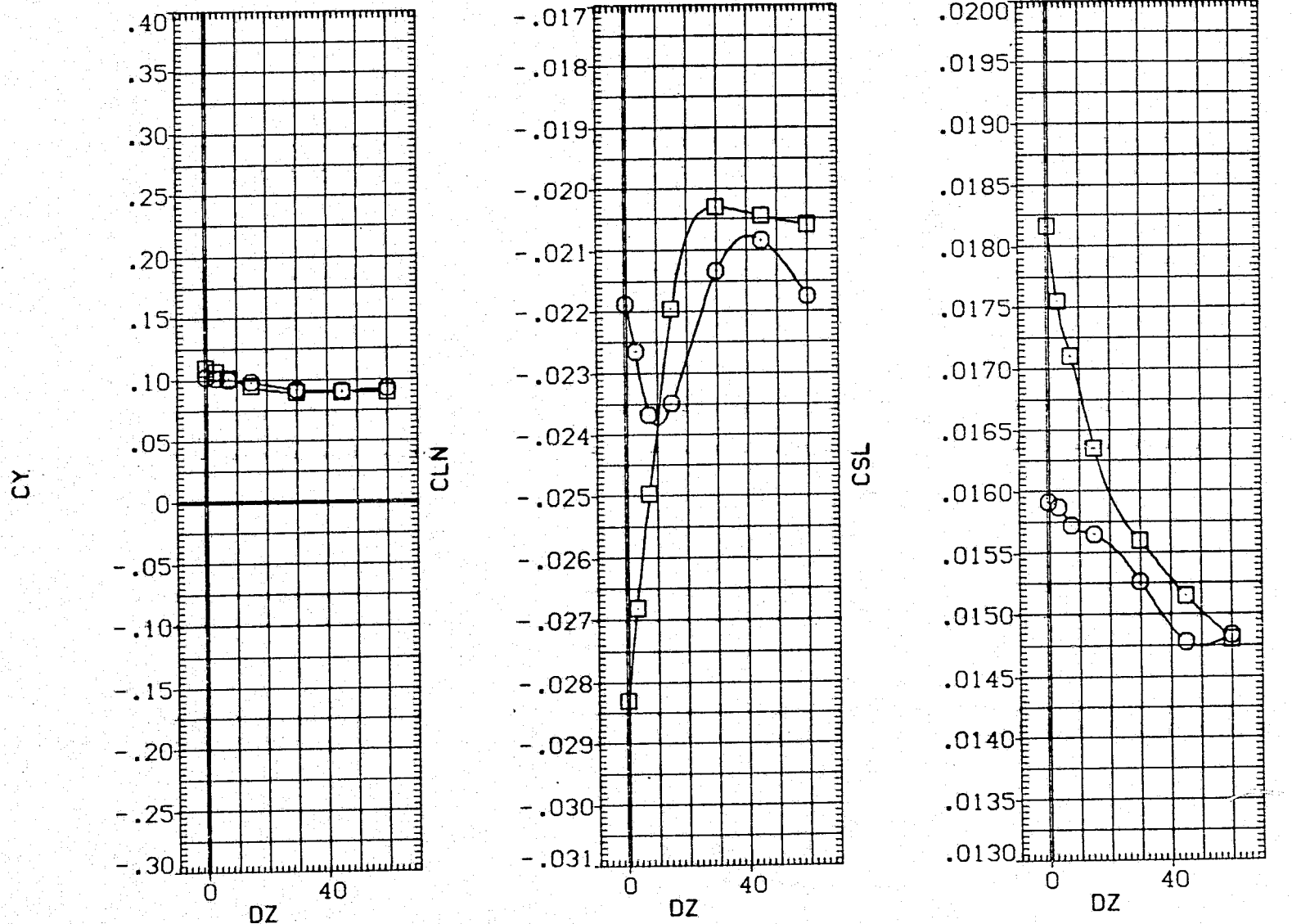


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	-5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	20.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

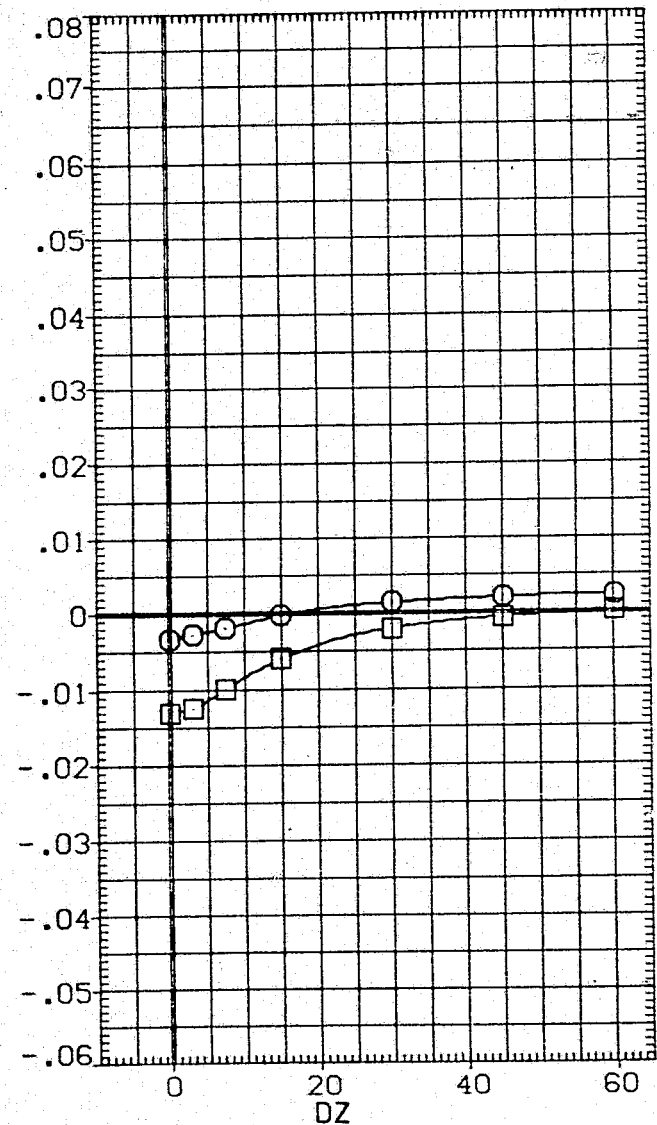
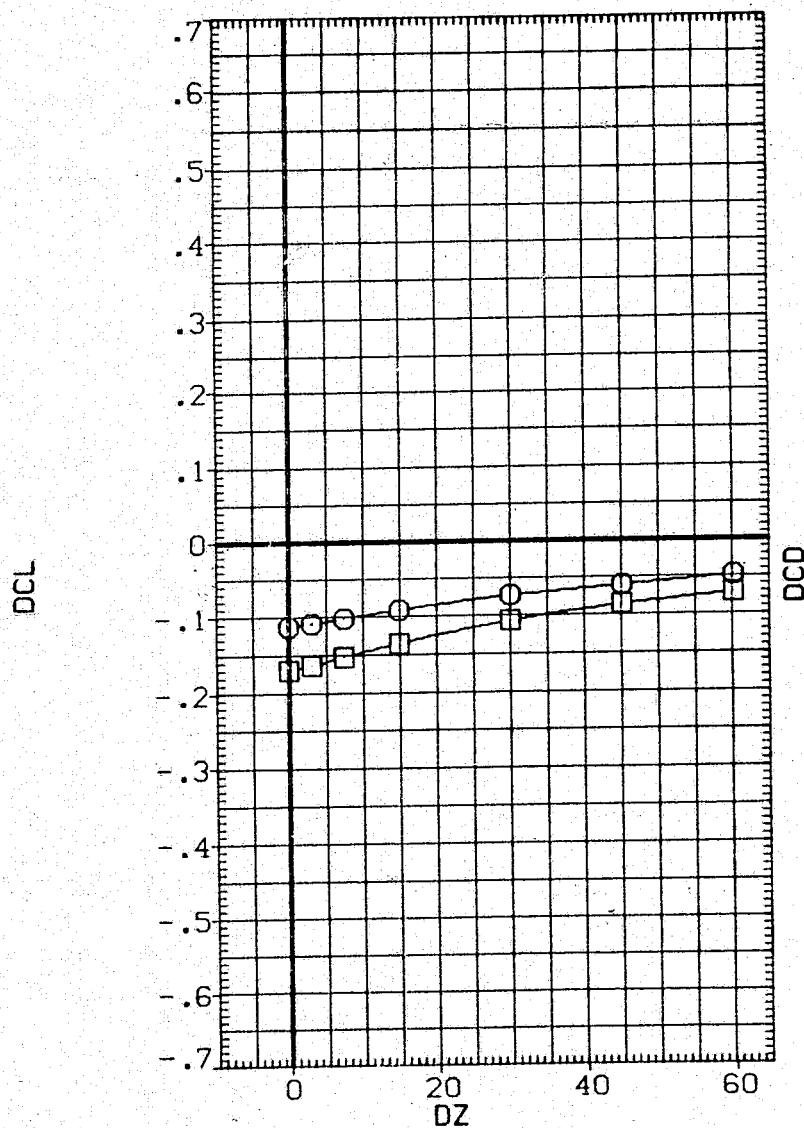


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
□	10.000	ALPHAC	4.000	BETAC	-5.000
○	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	20.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

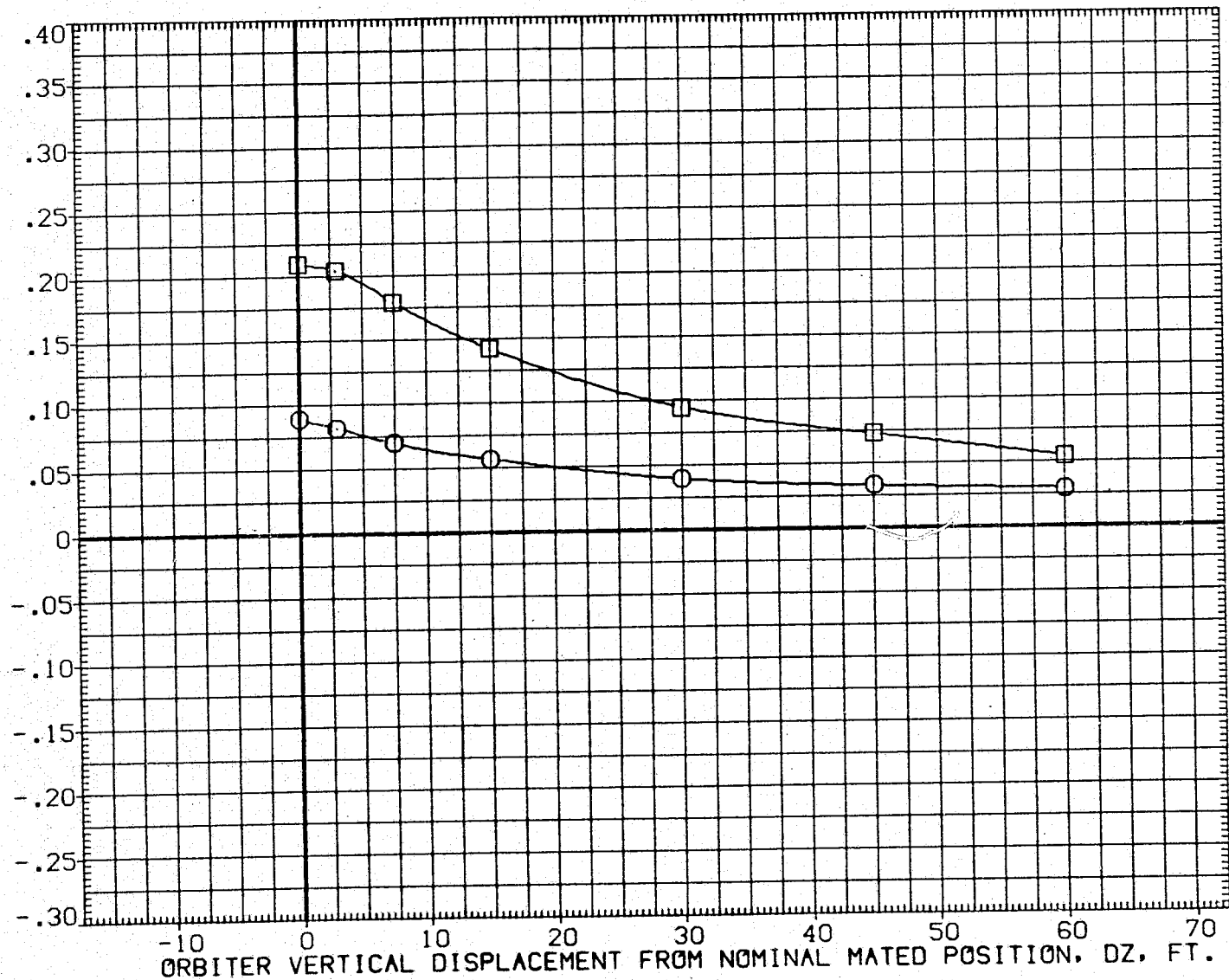


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA 0	ALPHAC	PARAMETRIC VALUES	
○	10.000	ALPHAC	4.000	BETAC
□	14.000	ELV-IB	.000	ELV-OB
		ELEVON	5.000	MACH
		PHI	.000	DX
		DY	.000	BETA0

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

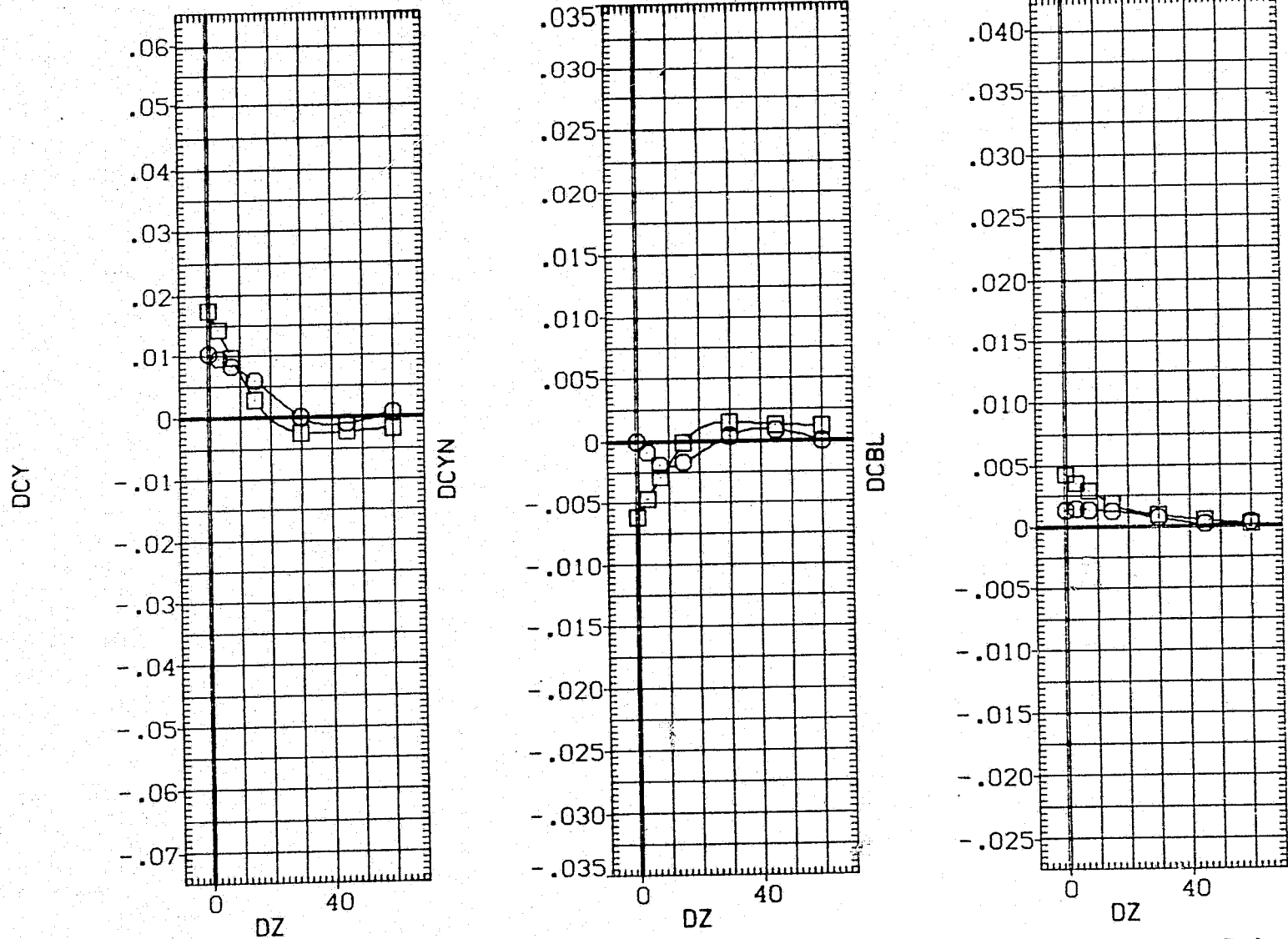


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	4.000	BETAC	-5.000
○	14.000	ELV-1B	.000	ELV-0B	3.000
□		ELEVON	5.000	MACH	.600
		PHI	.000	DX	20.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

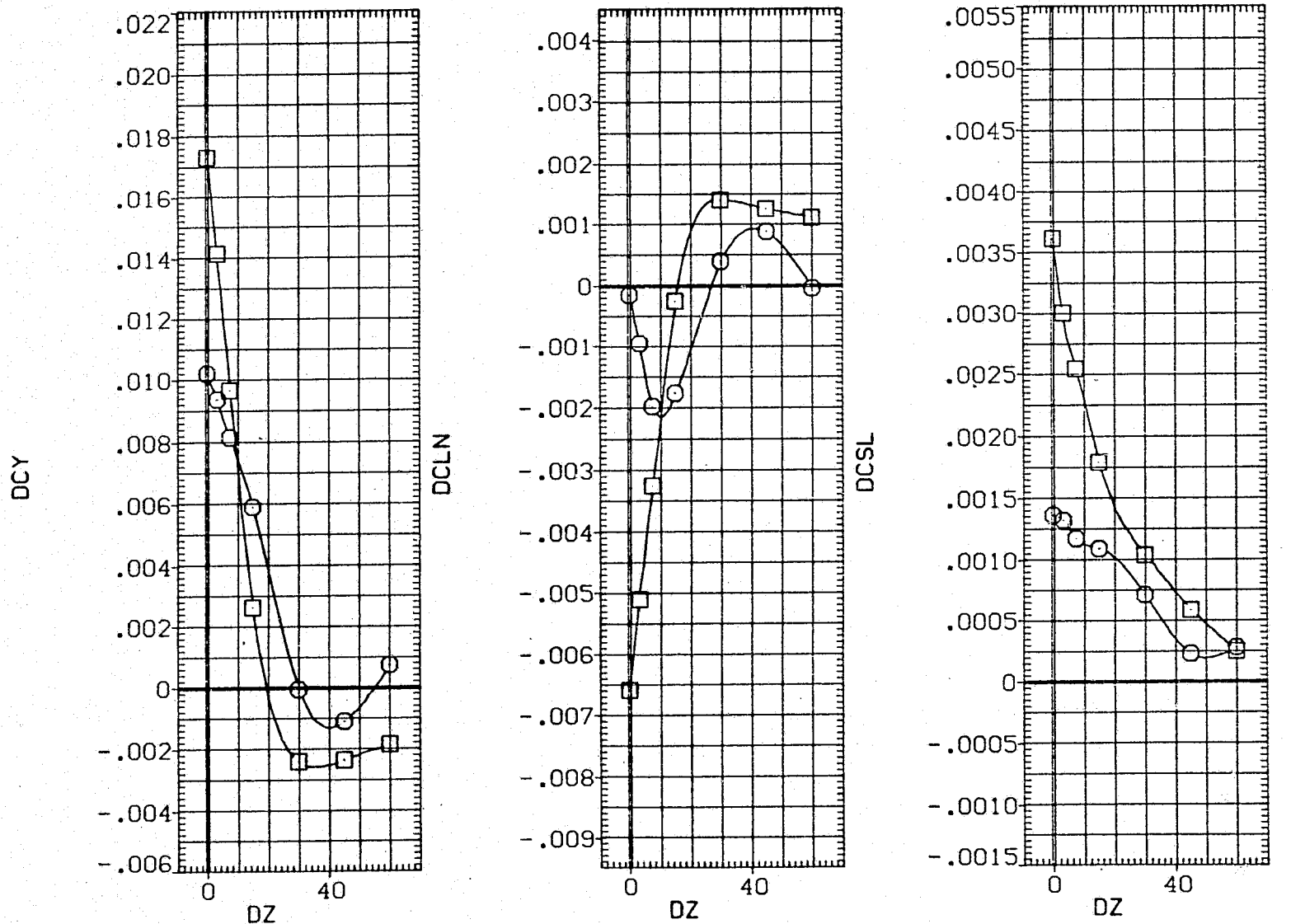


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

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CARRIER DATA (MGN067)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEV0N 5.000 MACH .600
		BETA0 .000 PHI .000
		DY .000 BETAC -5.000
		DX 20.000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

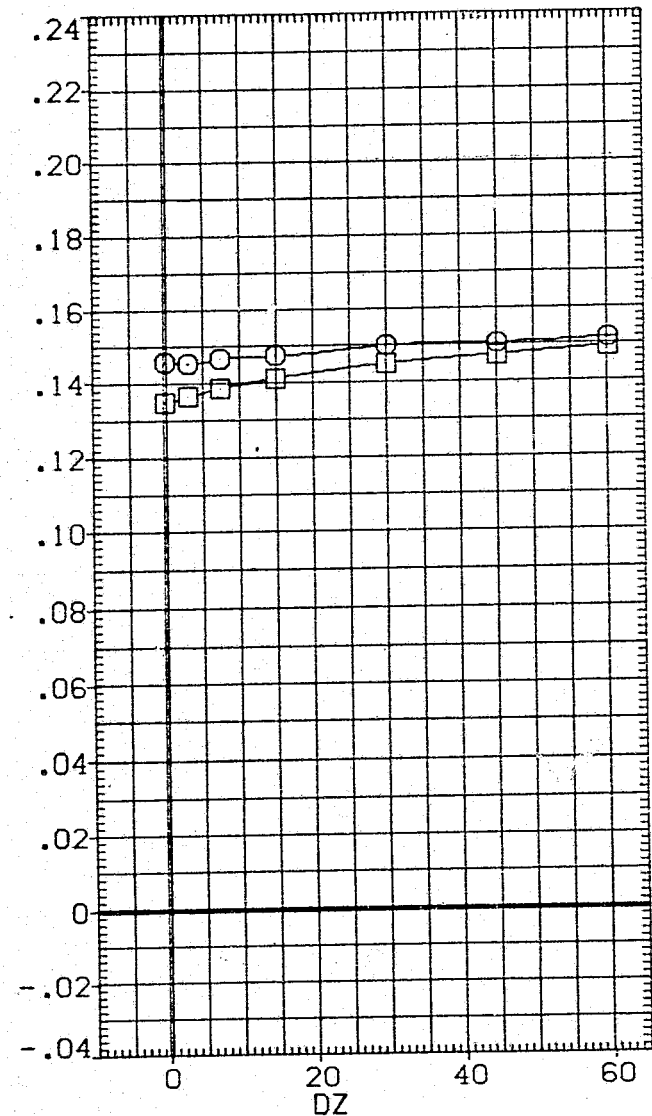
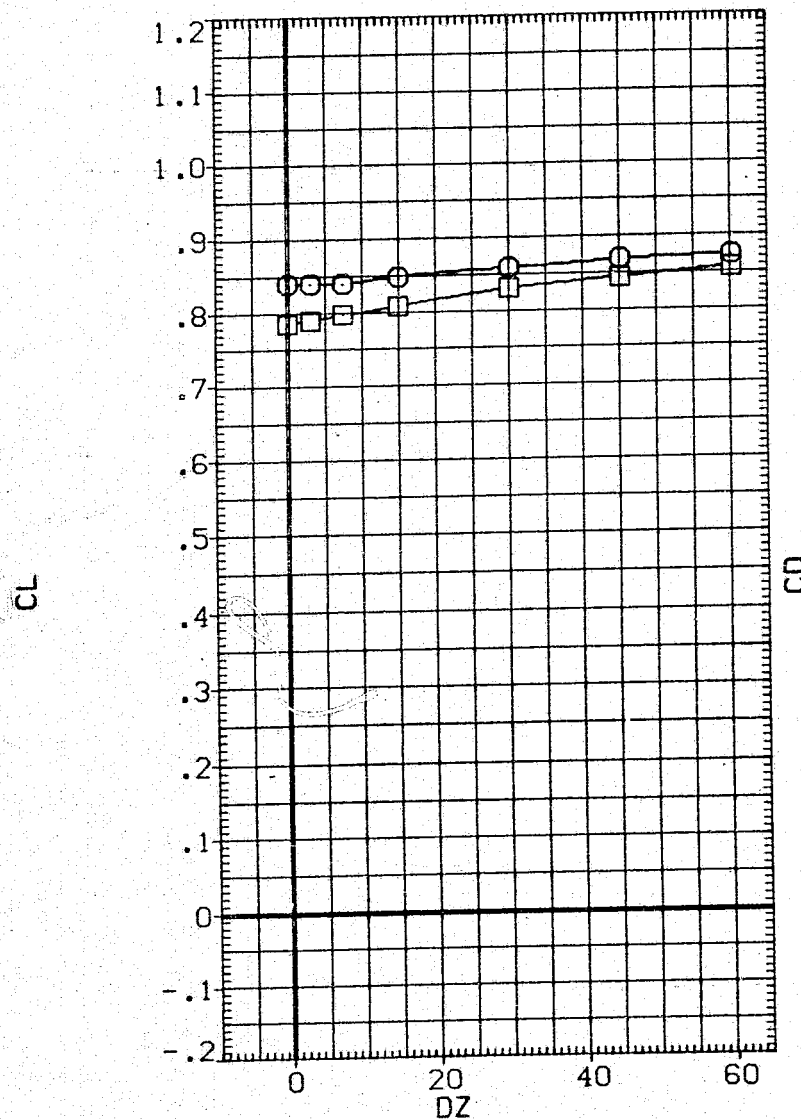


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

ELV-1B

14.000

ELEVON

BETA0

DY

DX

PARAMETRIC VALUES

.000

5.000

.000

.000

20.000

ELV-0B

MACH

PHI

BETAC

ALPHAC

3.000

.600

.000

-5.000

8.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

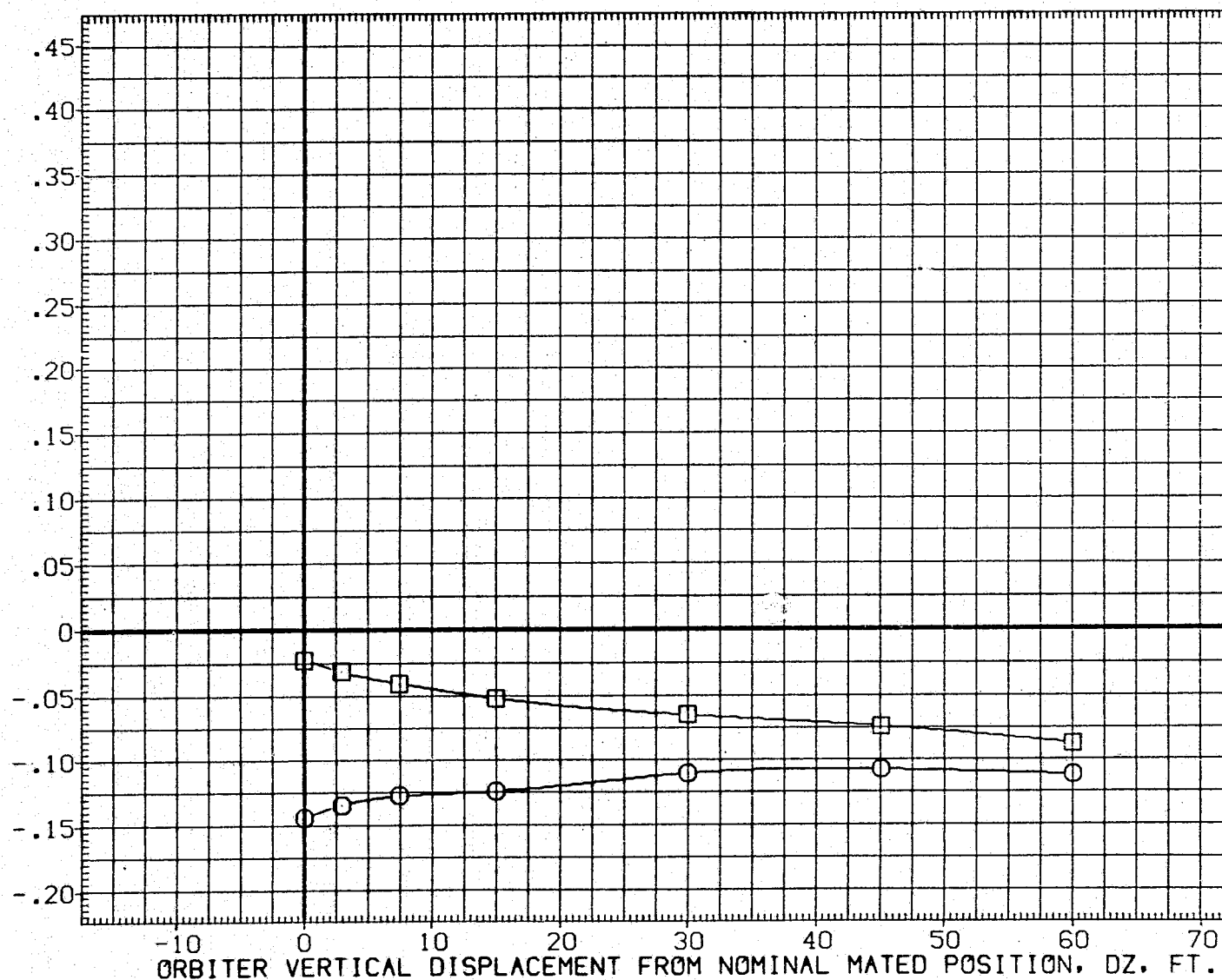


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	3.000	
□	14.000	BETA0	5.000	.600	
		DI	.000	.000	
		DX	.000	BETAC	-5.000
			20.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

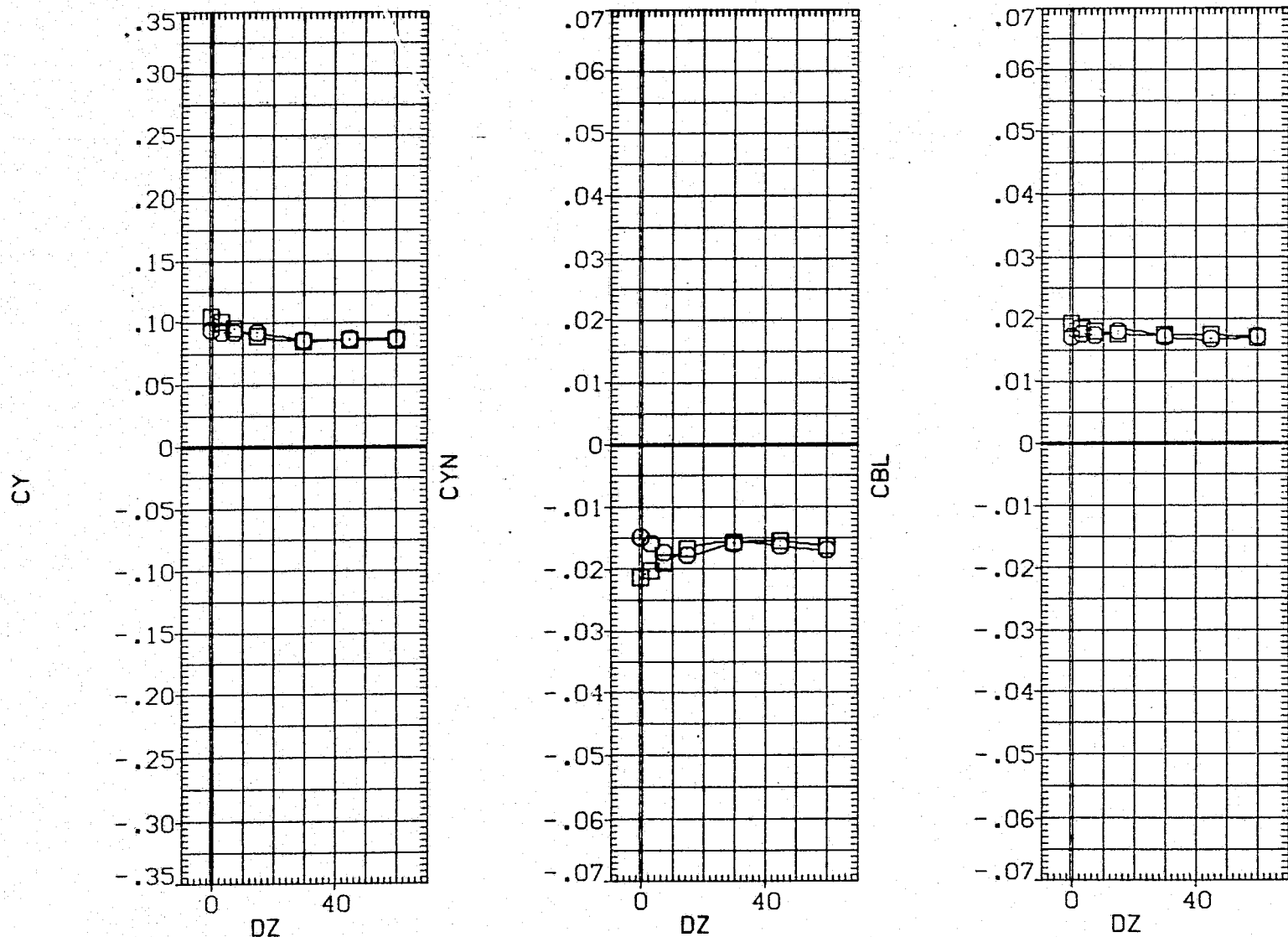


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	PHI	.000
		DY	.000	BETAC	-5.000
		DX	20.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

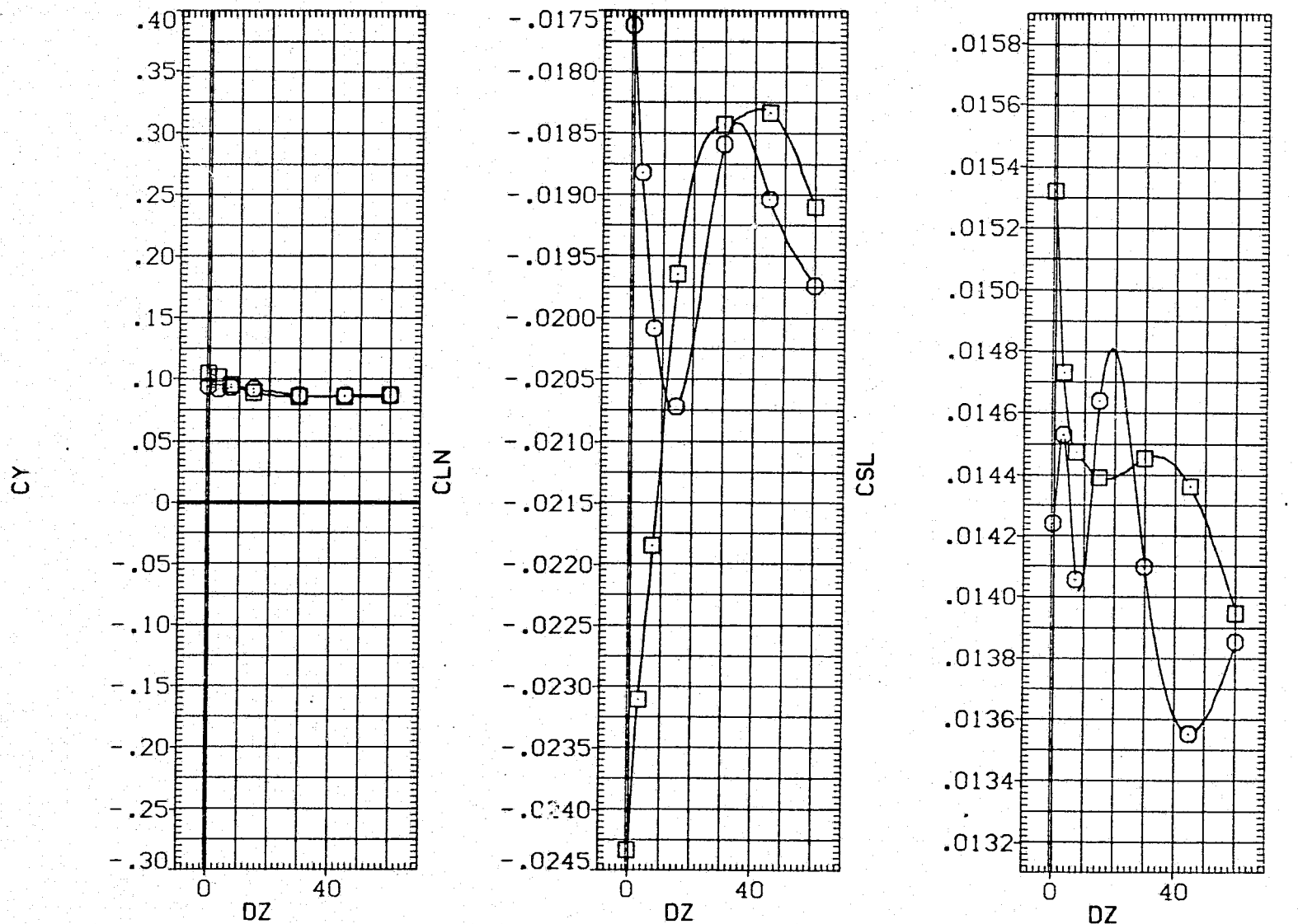


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	-5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	20.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

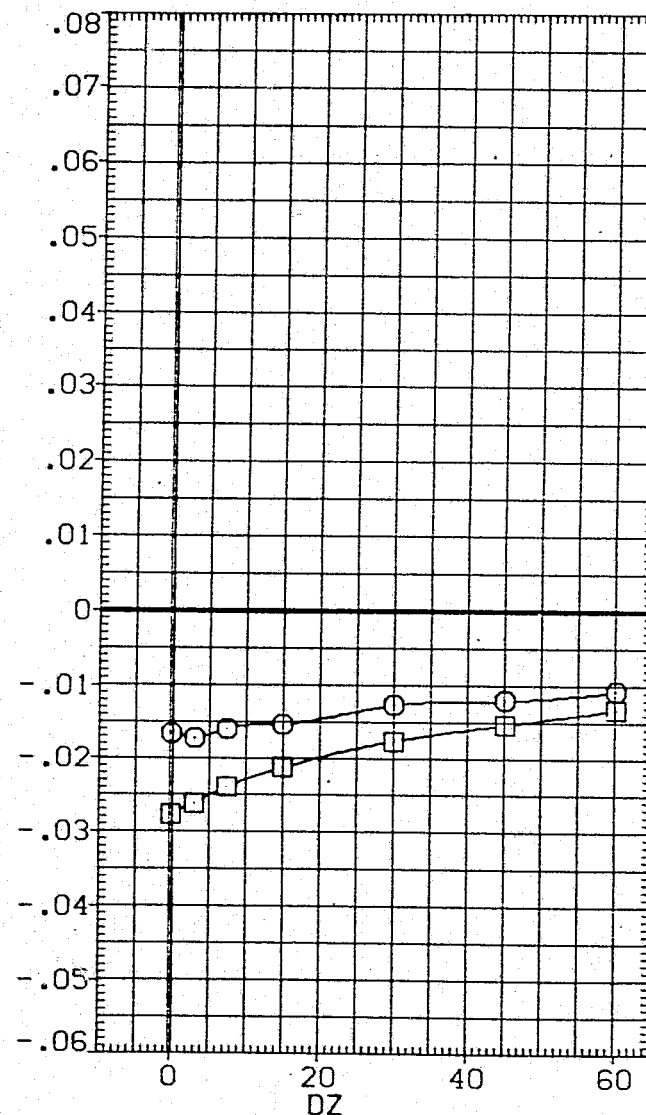
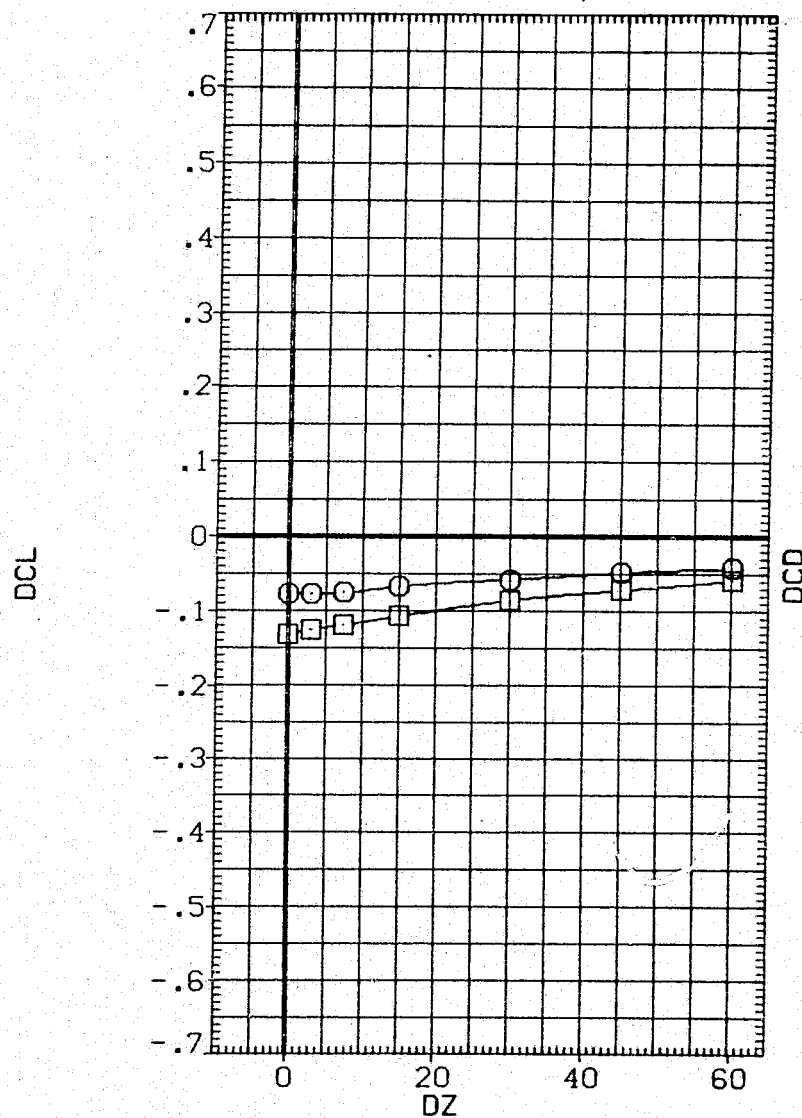


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

BETAC

-5.000

ELV-OB

3.000

MACH

.600

DX

20.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

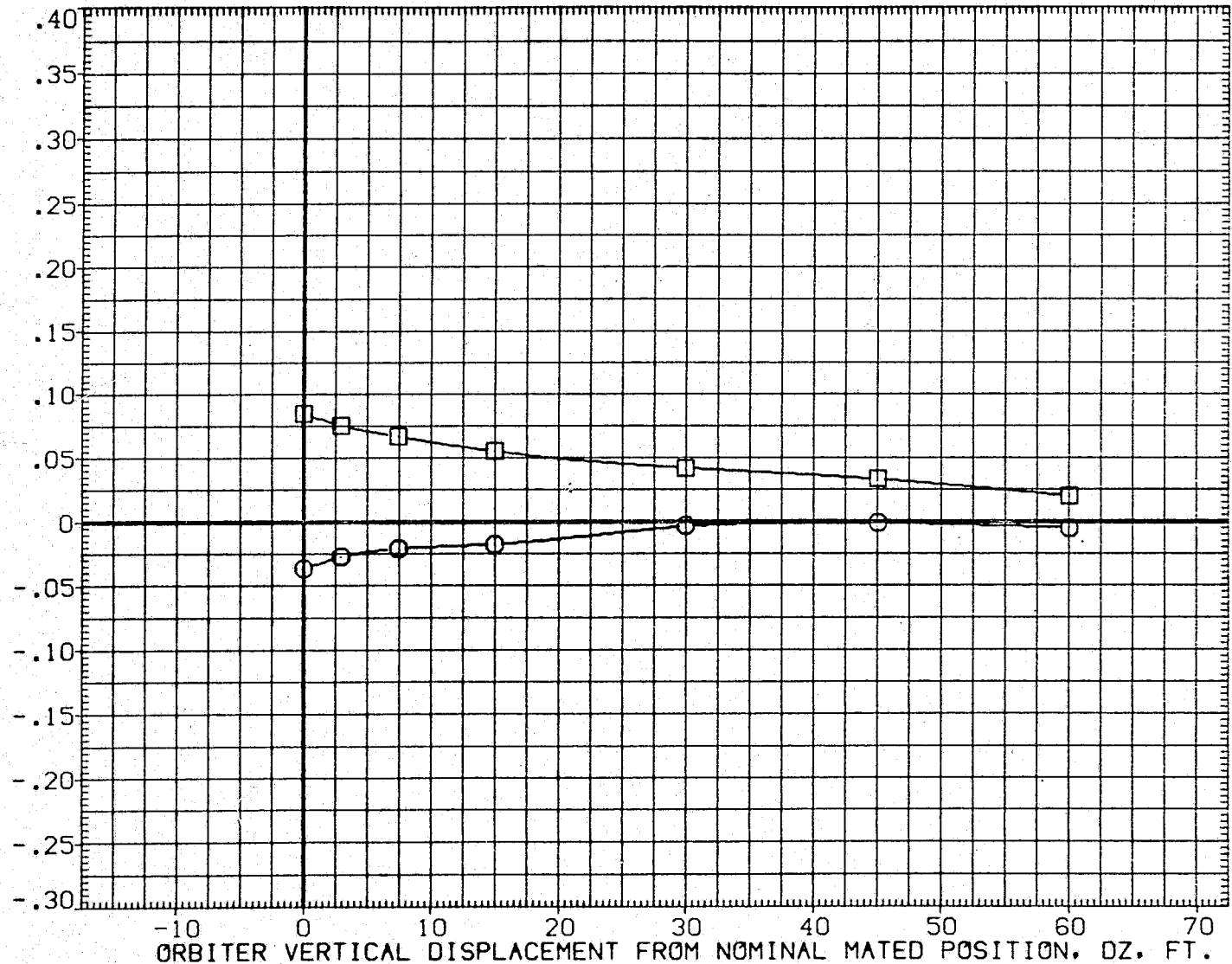


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC - 8.000	BETAC -5.000
□	14.000	ELV-1B .000	ELV-0B 3.000
		ELEVON 5.000	MACH .600
		PHI .000	DX 20.000
		DY .000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

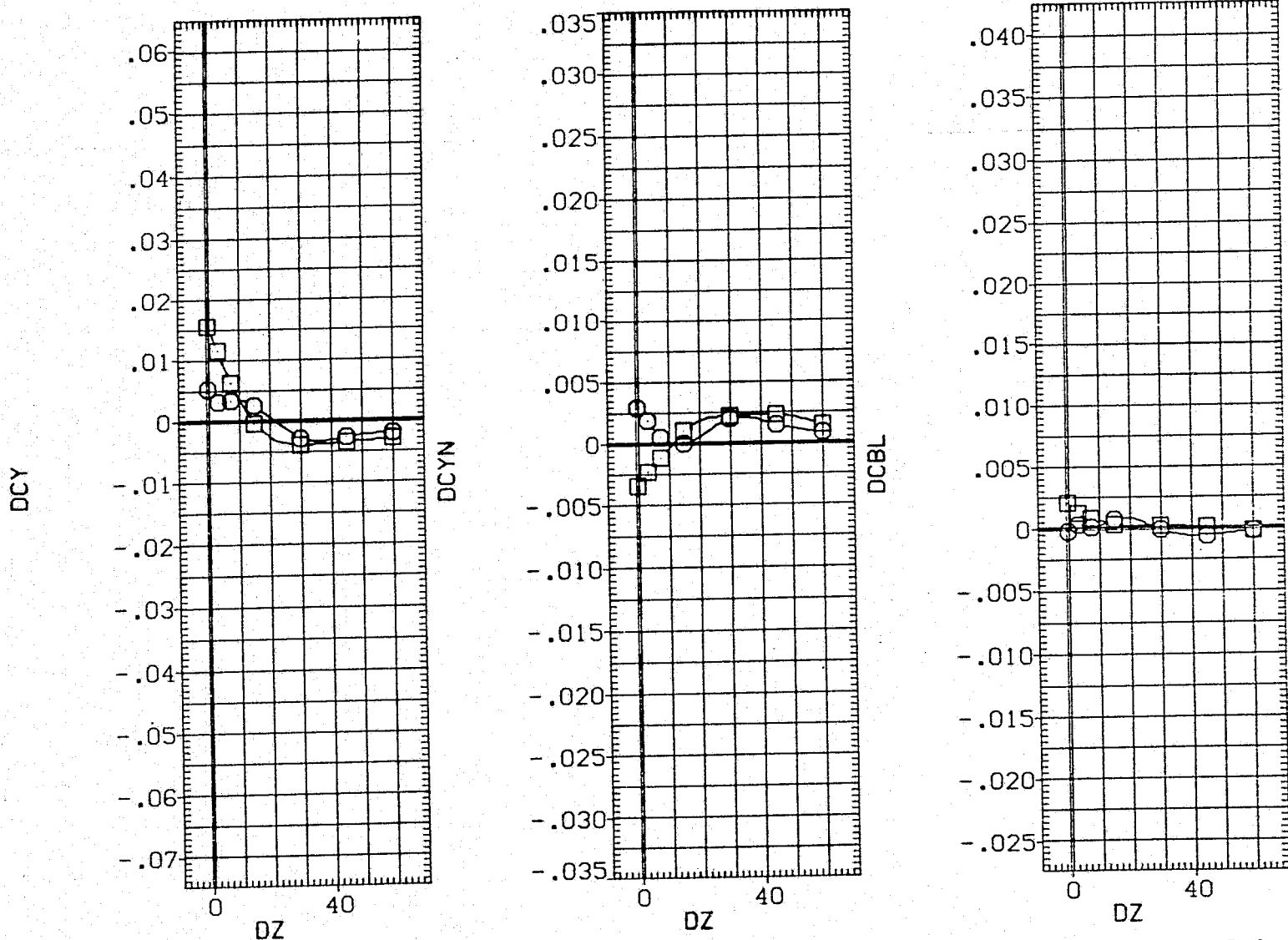


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA2	ALPHAC	PARAMETRIC VALUES	
○	10.000	ALPHAC	8.000	BETAC -5.000
□	14.000	ELV-1B	.000	ELV-0B 3.000
		ELEVON	5.000	MACH .600
		PHI	.000	DX 20.000
		DY	.000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

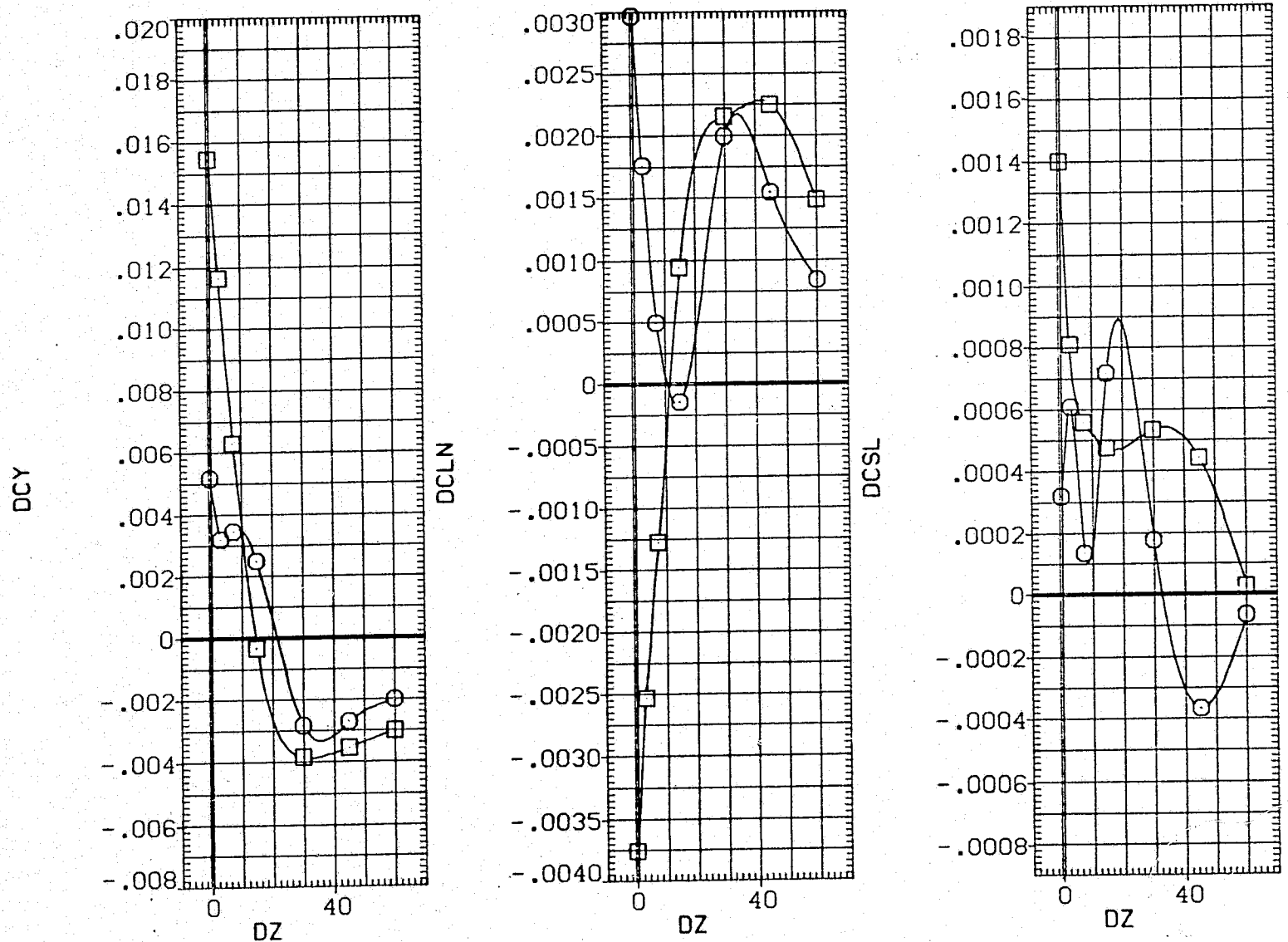


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

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CARRIER DATA (MGN068)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	DY	-5.000
		DX	.000	ALPHAC	10.000
					4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

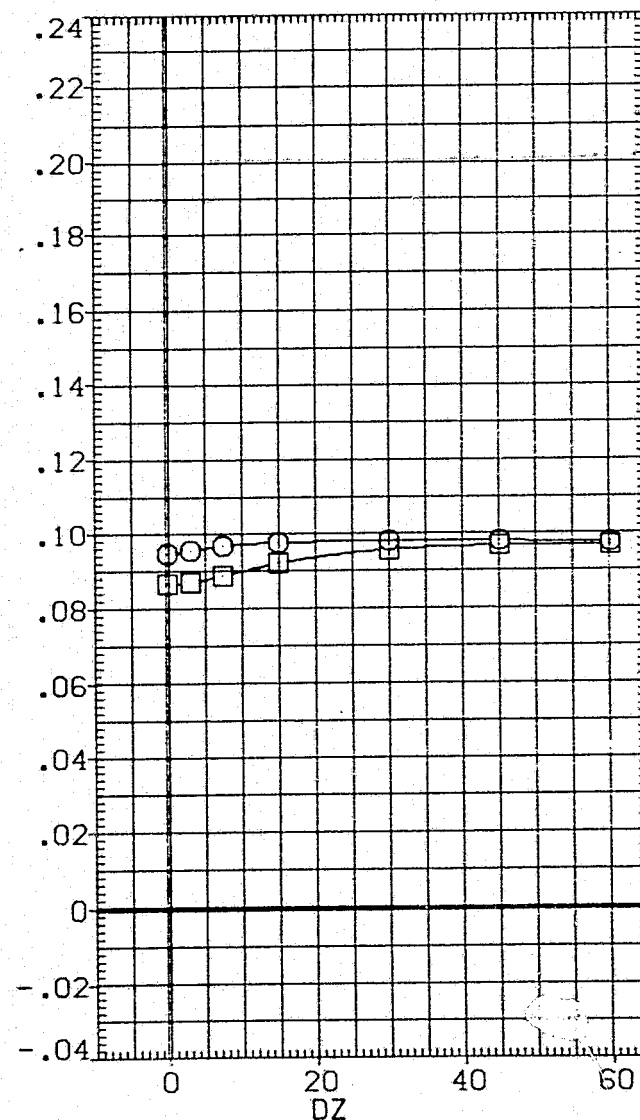
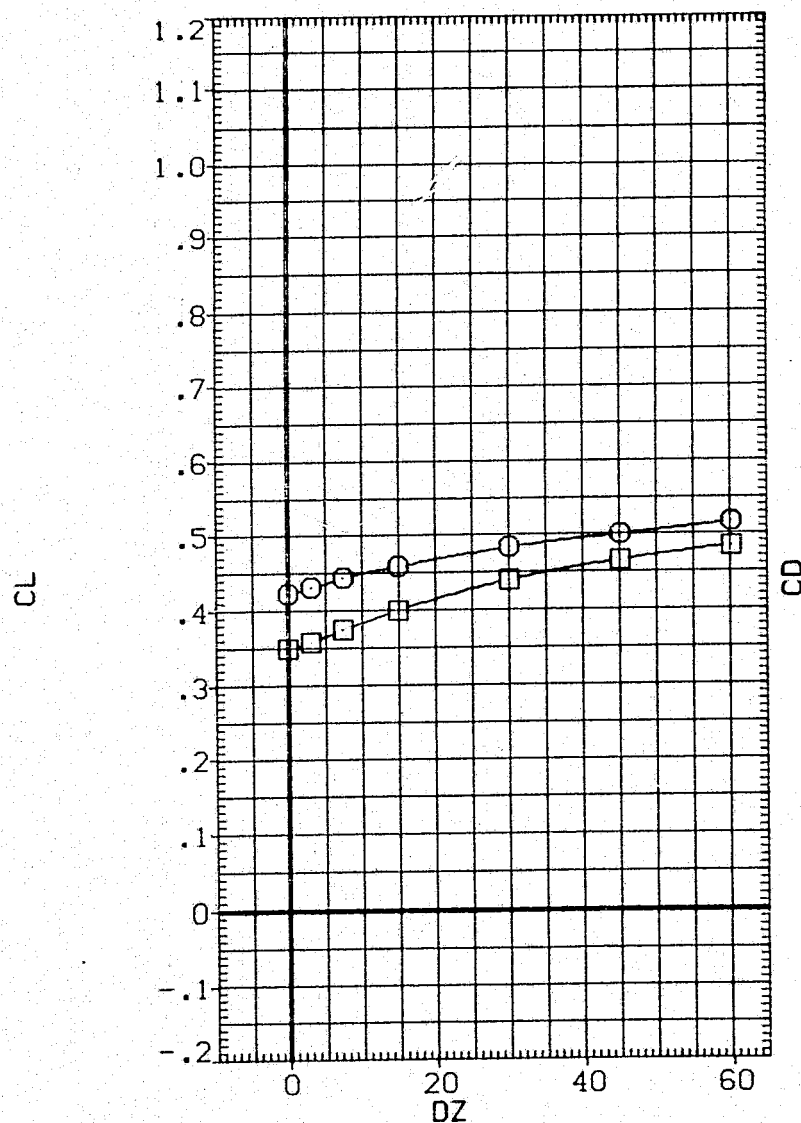


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0.)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

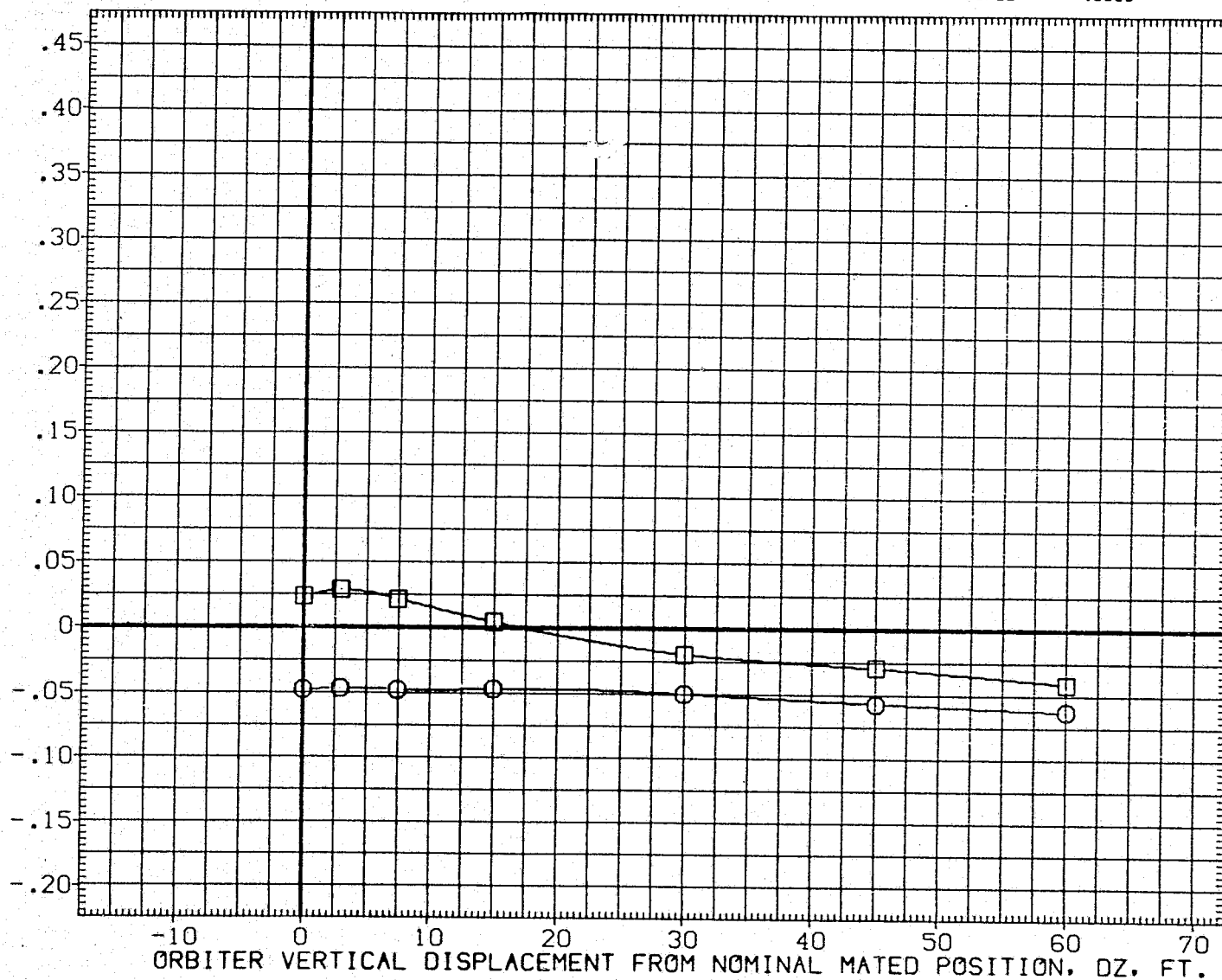


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

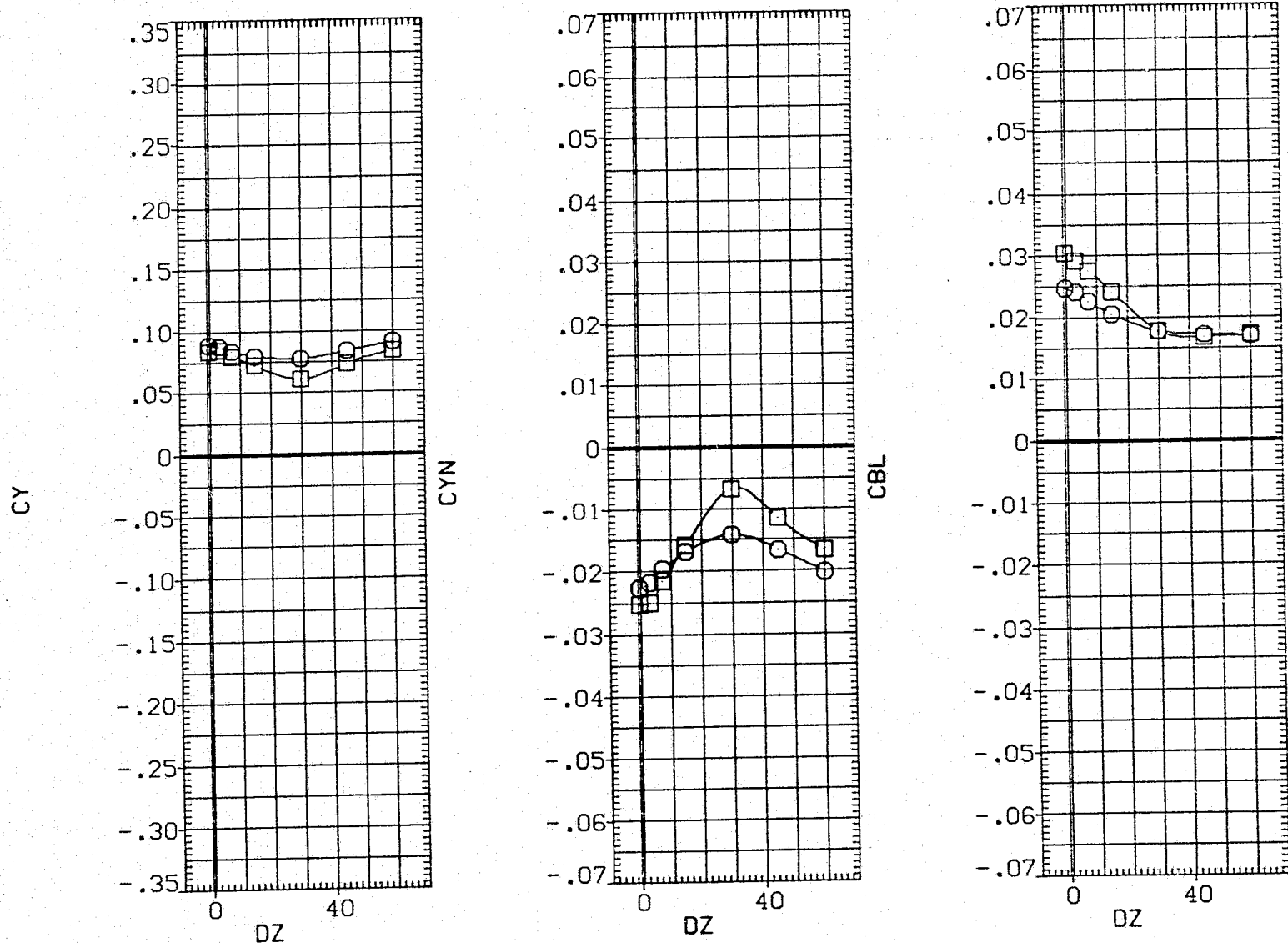


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB	
○	10.000		.000		3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

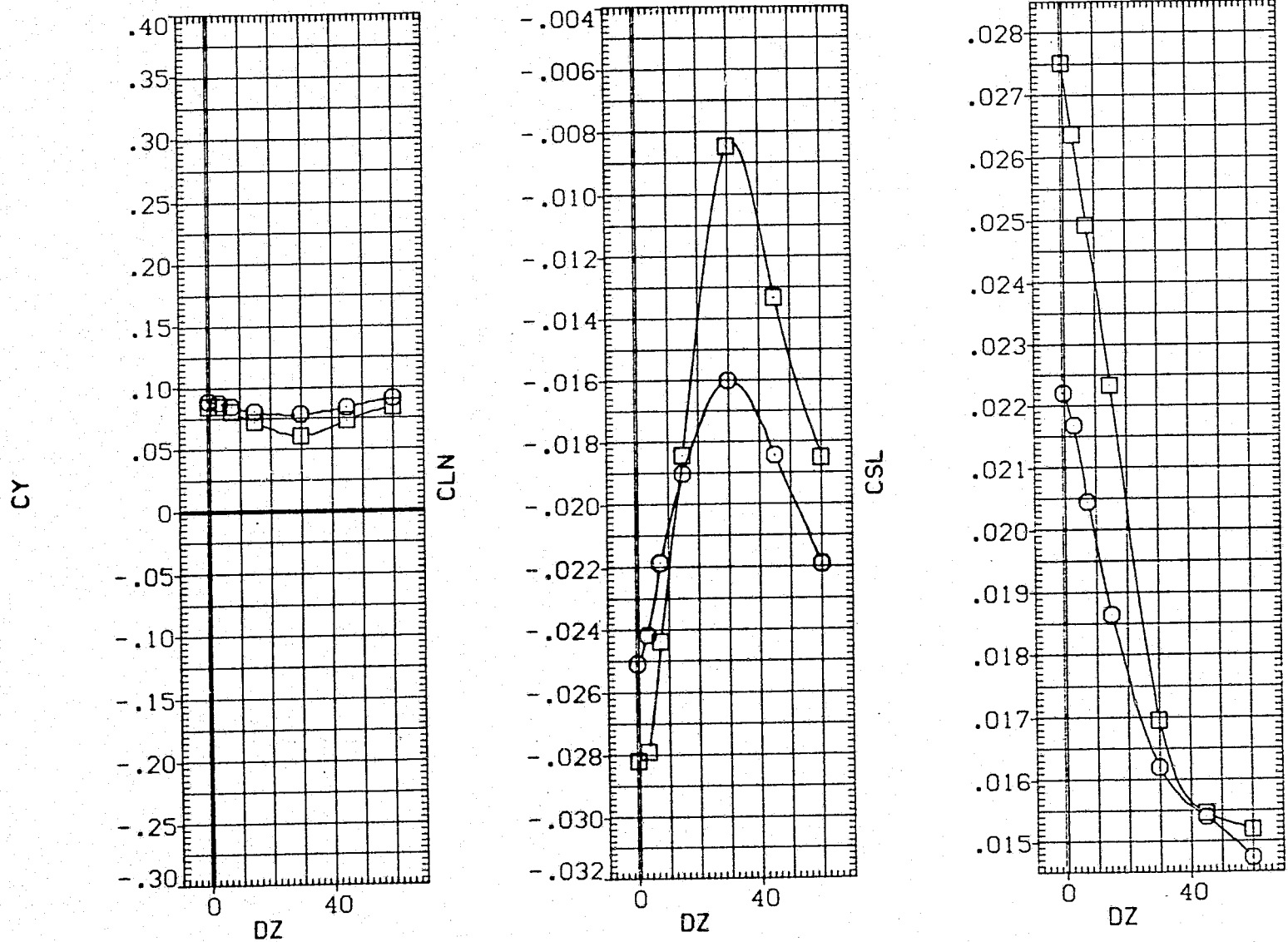


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

.000

10.000

BETAC

ELV-OB

MACH

DX

BETA0

-5.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

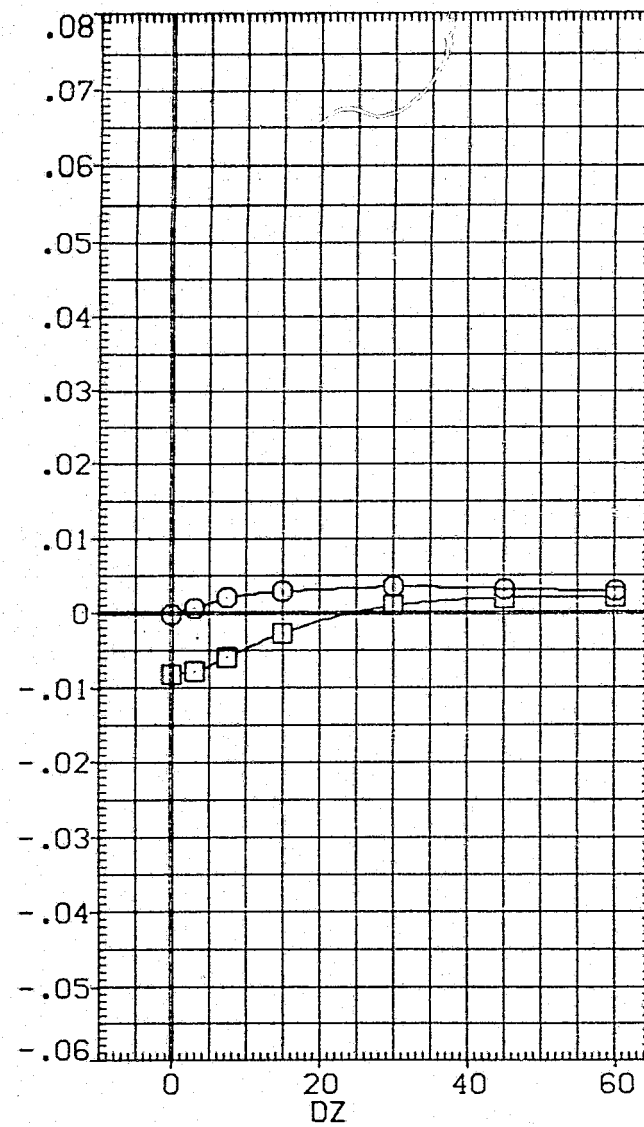
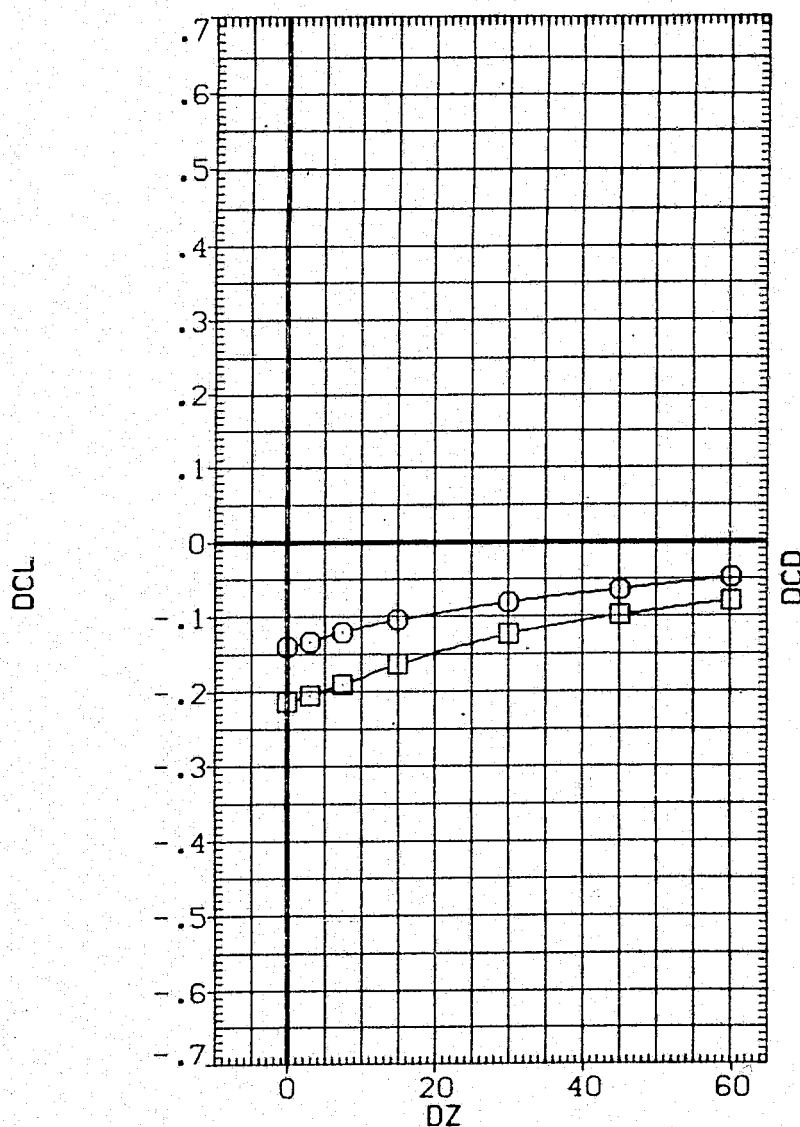


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

-5.000

ELV-1B

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

PHI

.000

DX

.000

DY

10.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000

SQ.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

IN.YC

ZMRP 190.8000

IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

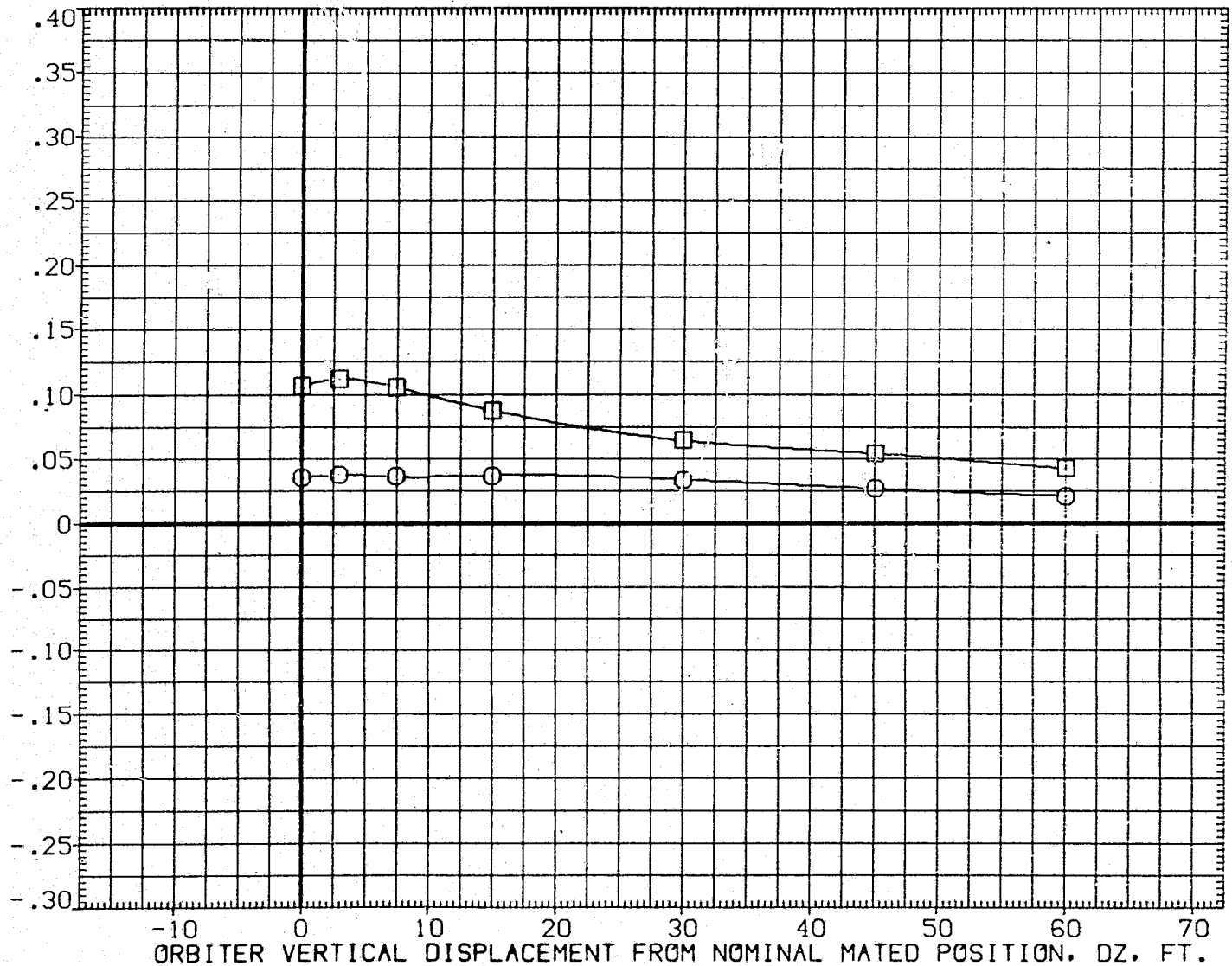


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES			
	10.000	ALPHAC	4.000	BETAC	-5.000	
○	10.000	ELV-1B	.000	ELV-0B	3.000	
□	14.000	ELEVON	5.000	MACH	.600	
		PHI	.000	DX	.000	
		DY	10.000	BETA0	.000	

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

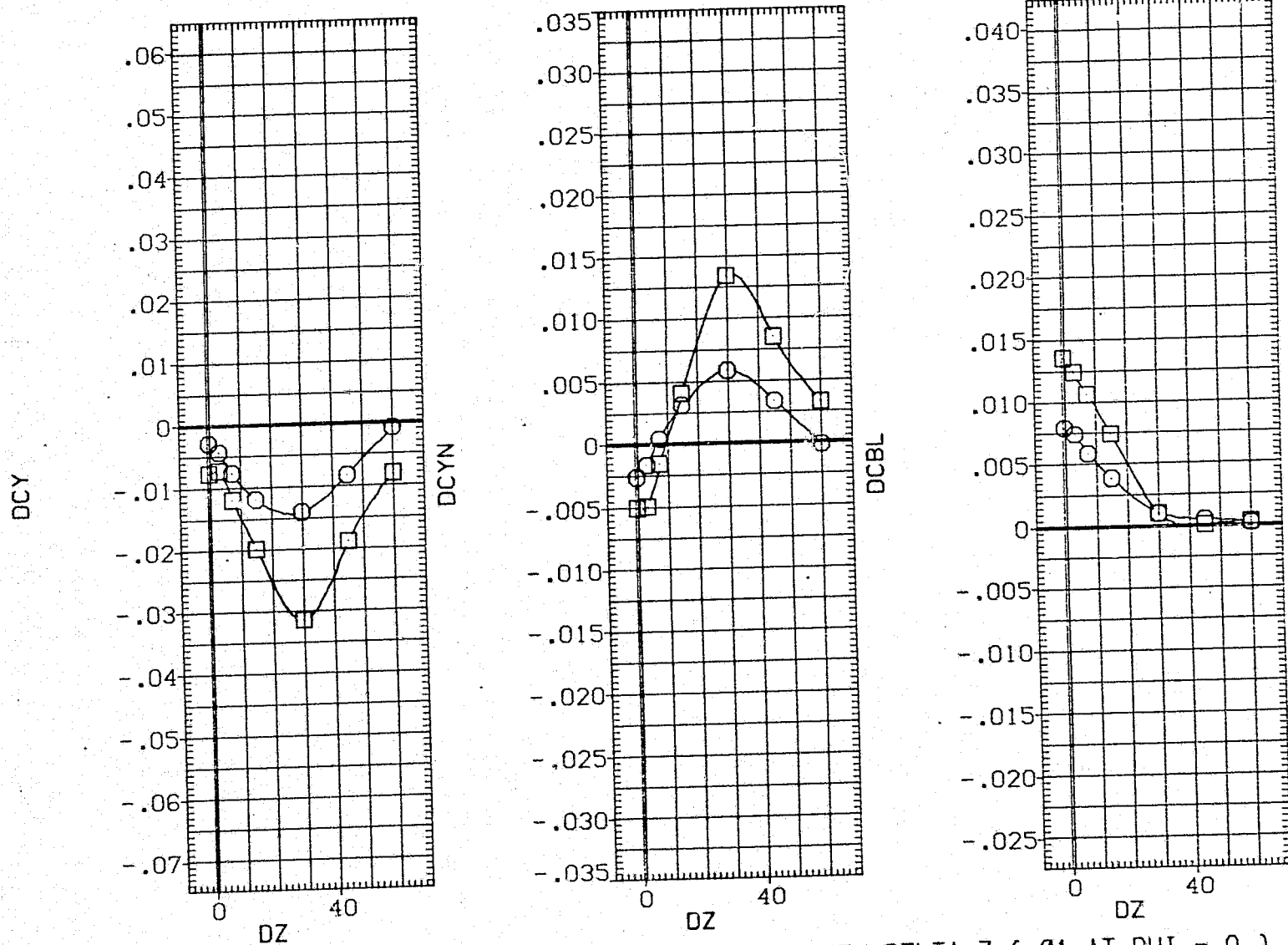


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

-5.000

ELV-1B

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

PHI

.000

DX

.000

DY

10.000

BETA0

.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	190.8000	IN.ZC
SCALE	.0300	

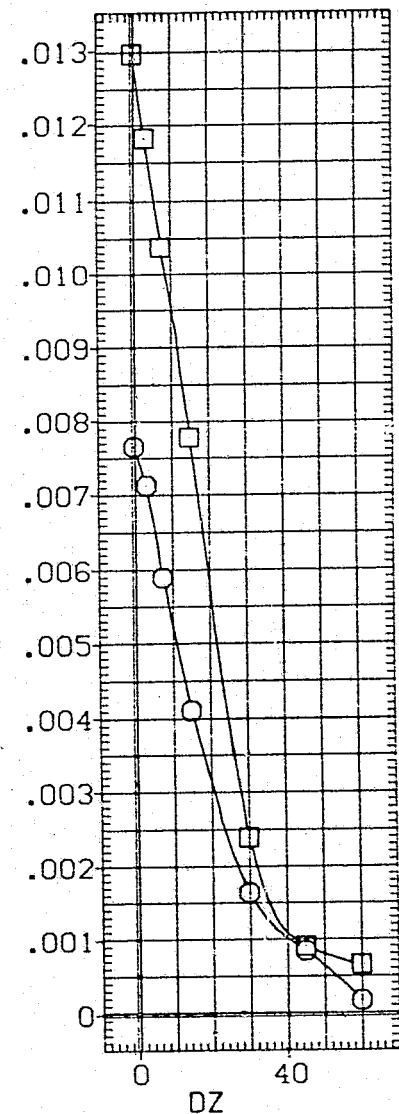
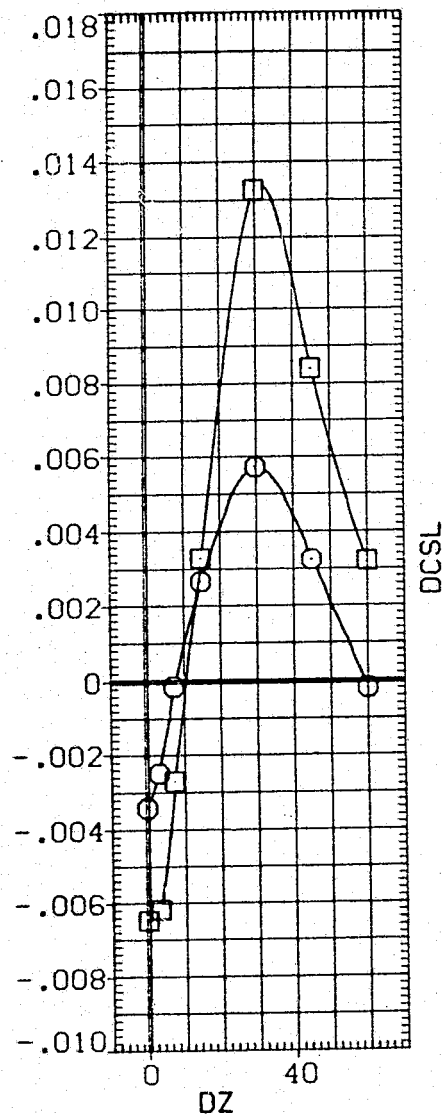
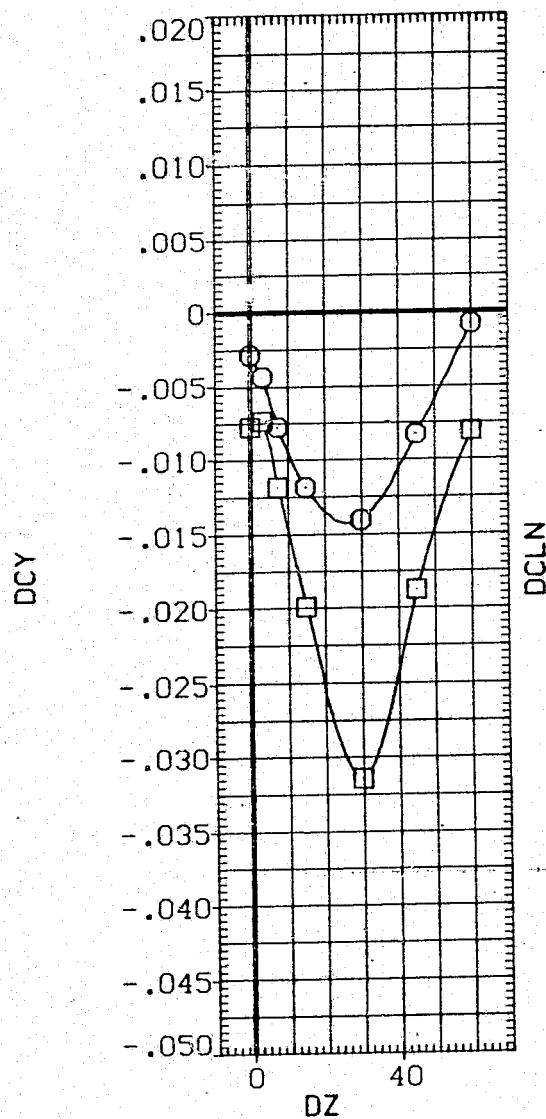


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN070)

SYMBOL



ALPHA 0

10.000

ELV-IB

PARAMETRIC VALUES

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

BETA 0

.000

BETAC

-5.000

PHI

.000

DY

10.000

DX

.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

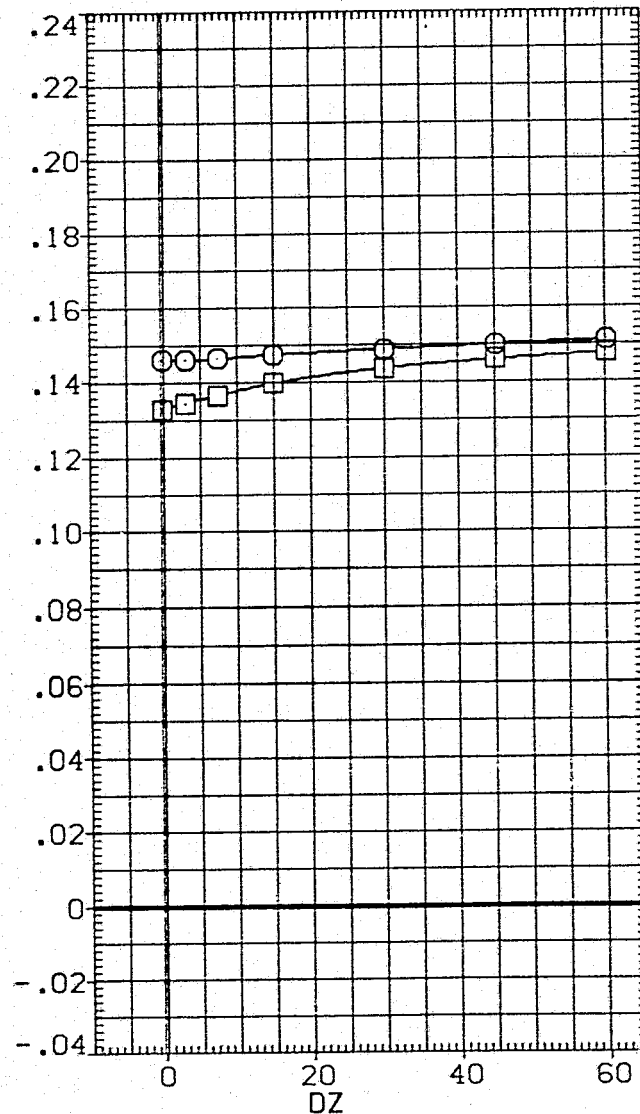
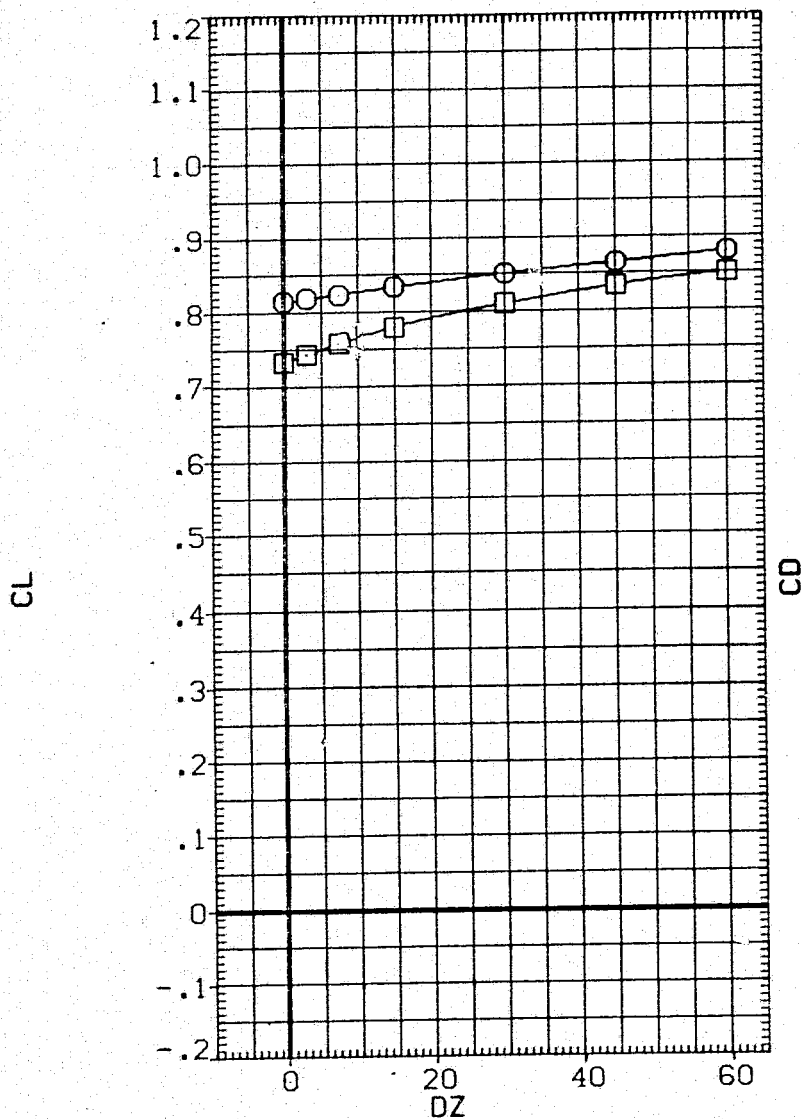


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-IB

ELEVON

BETA0

PHI

CX

PARAMETRIC VALUES

.000

5.000

.000

.000

.000

ELV-OB

MACH

BETAC

DY

ALPHAC

3.000

.600

-5.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

PITCHING MOMENT COEFFICIENT, CLM

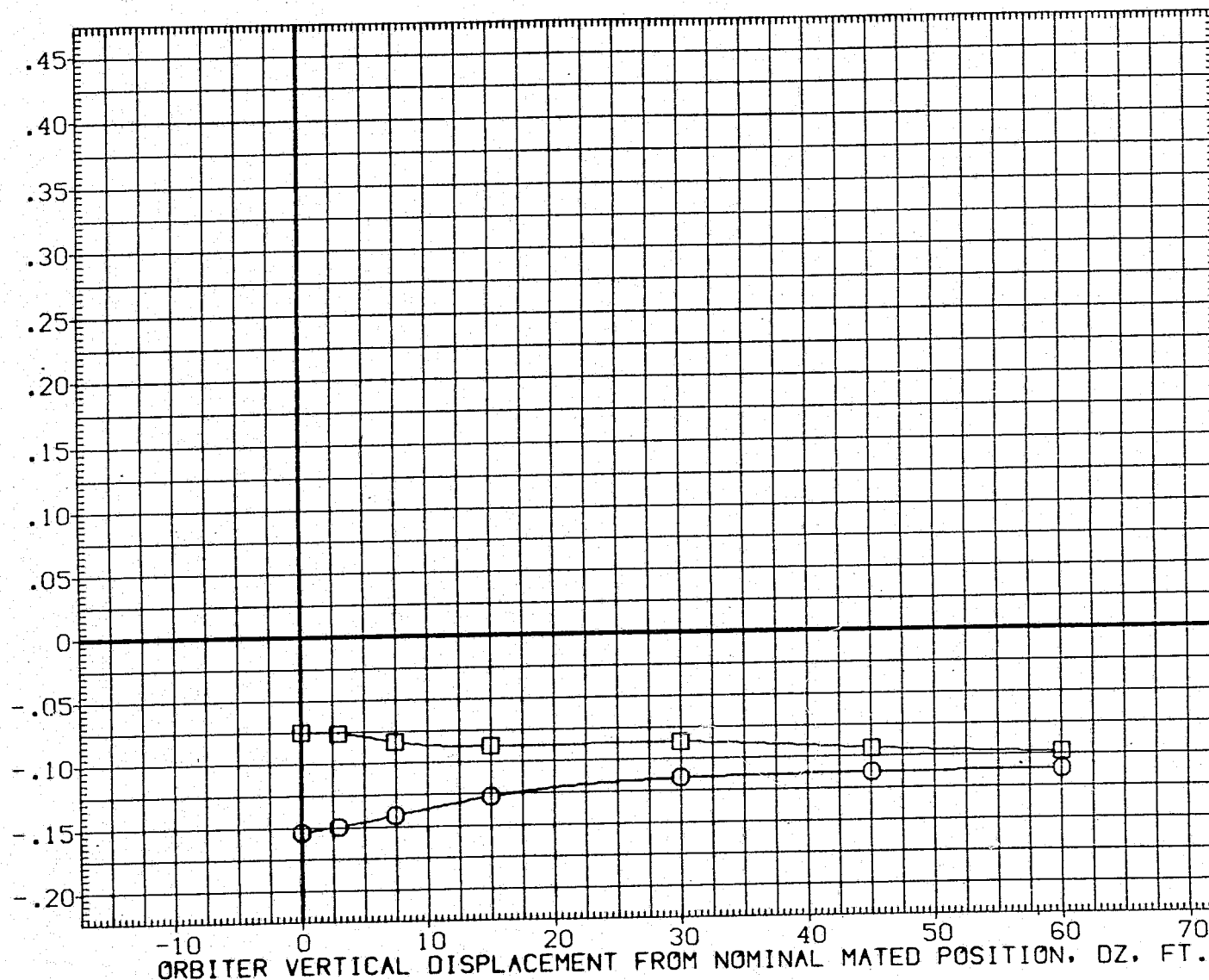


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN070)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEV0N	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

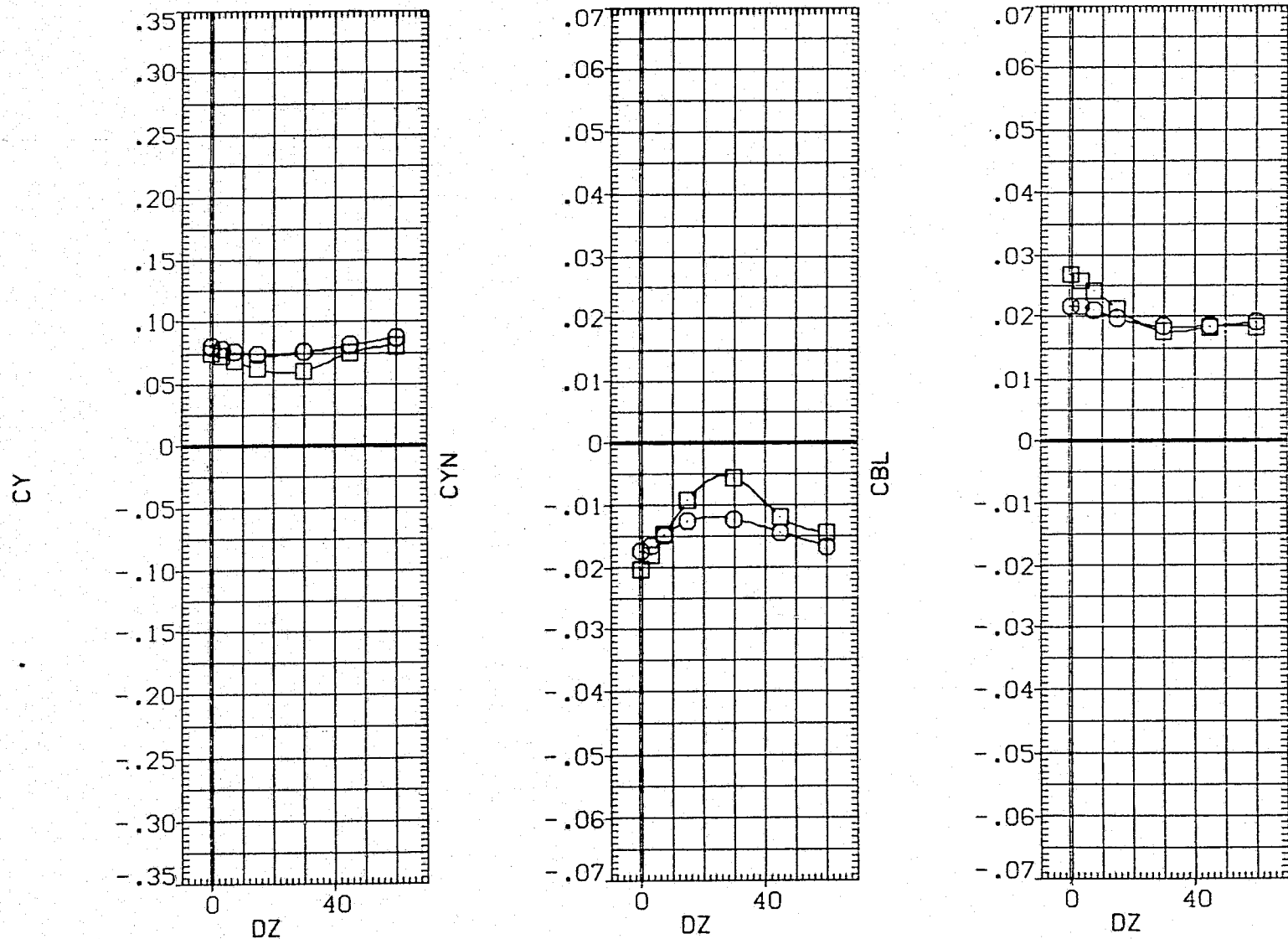


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC -5.000
		PHI .000 DY 10.000
		DX .000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

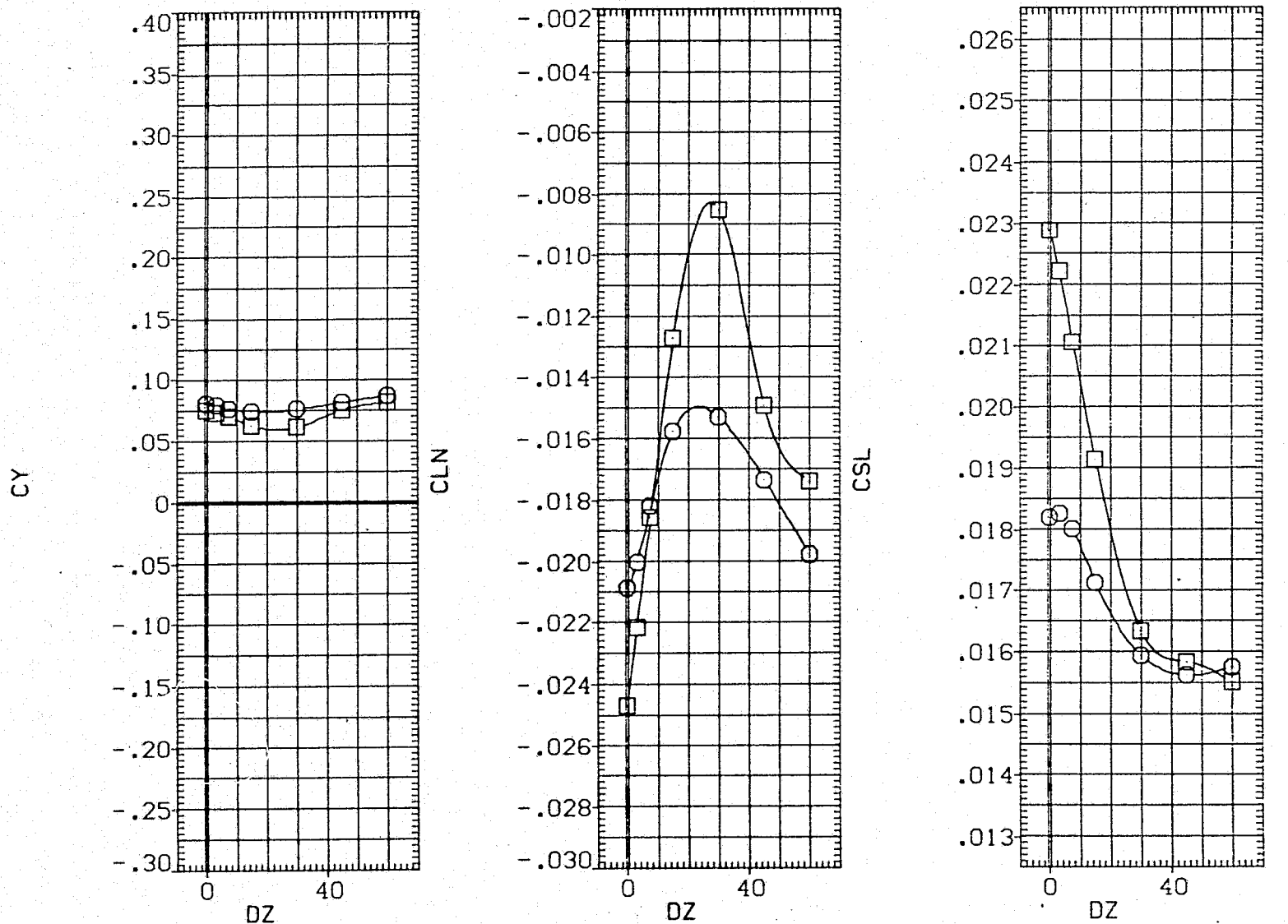


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHA0

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

.000

10.000

BETAC

ELV-0B

MACH

DX

BETA0

-5.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

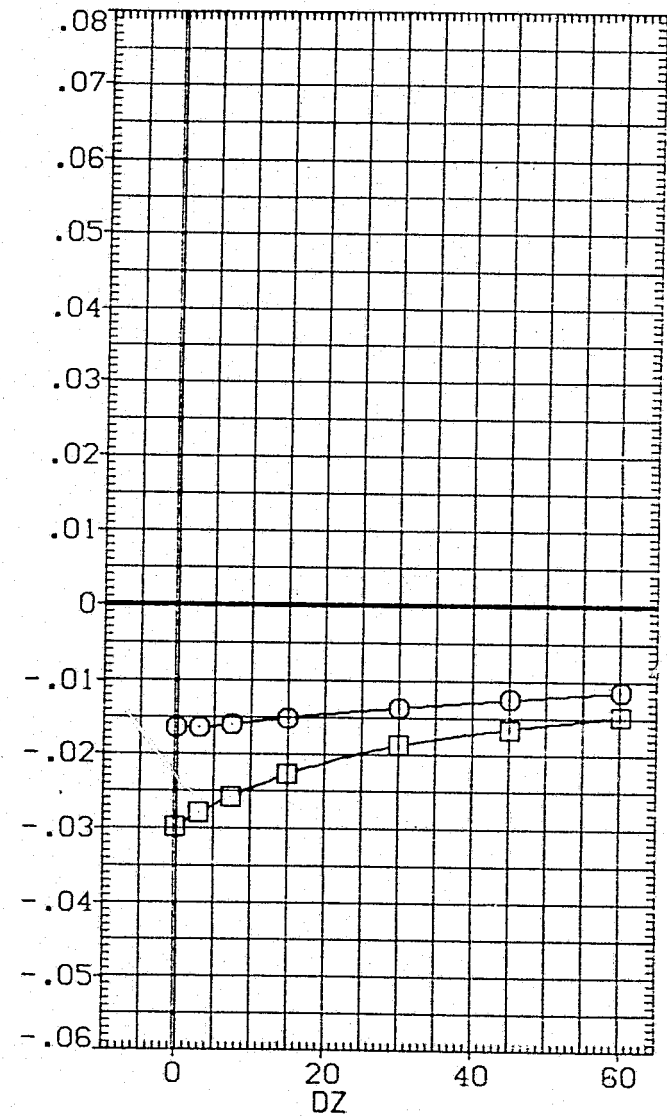
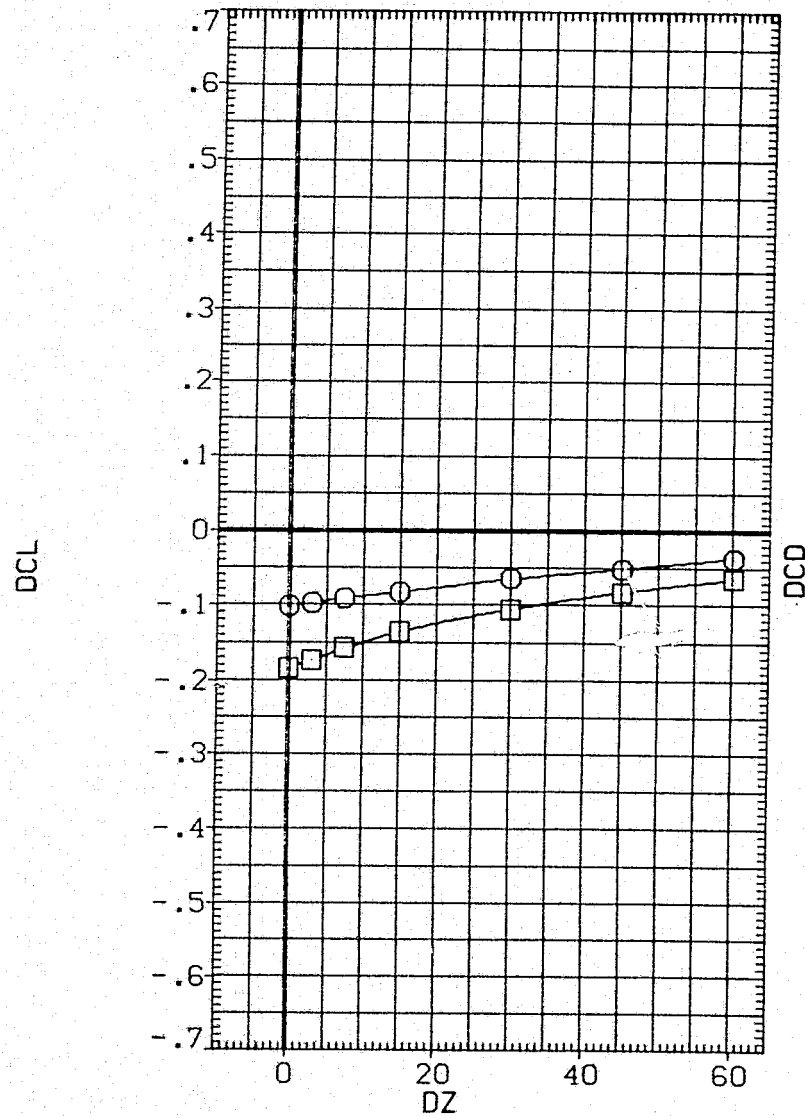


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	-5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

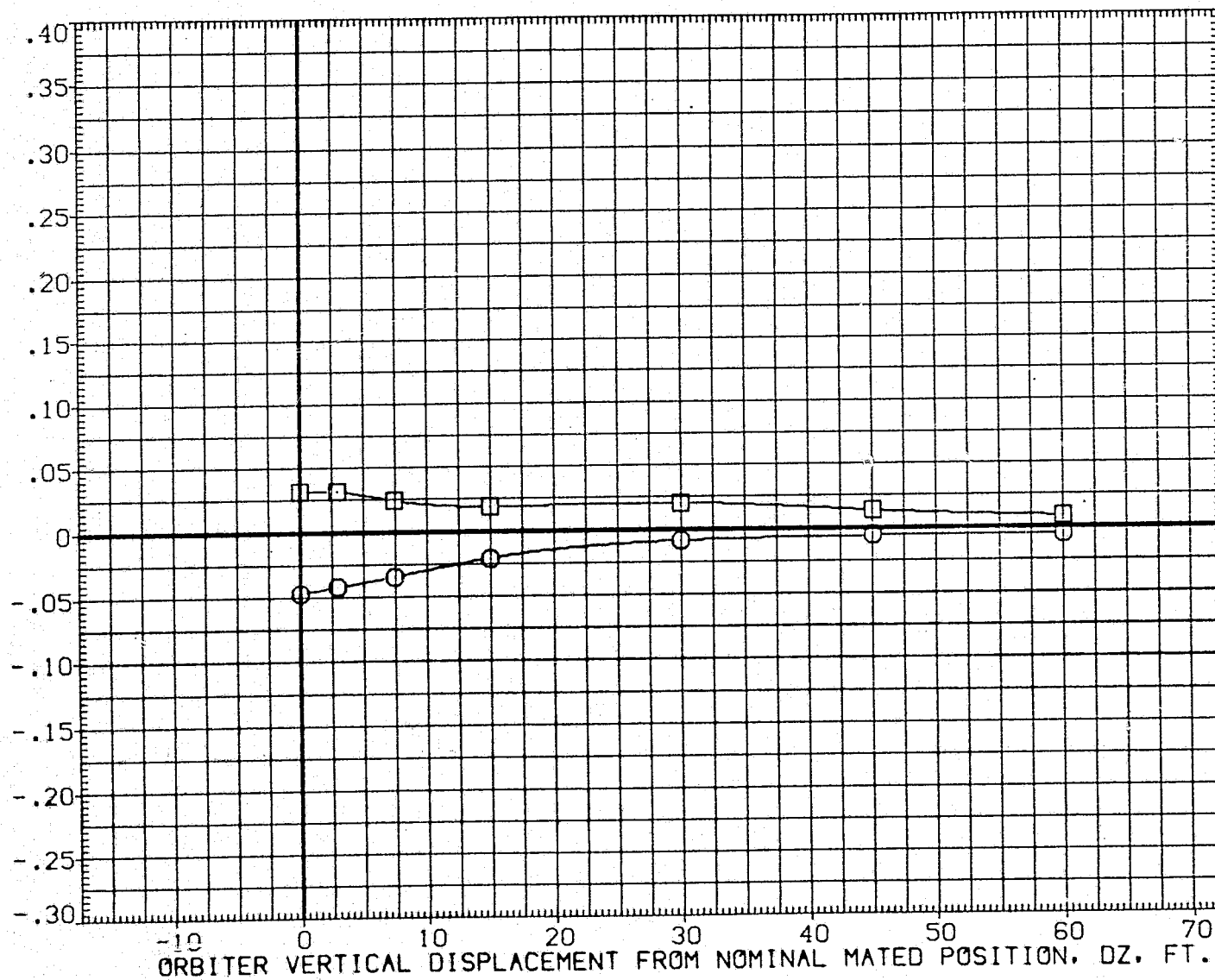


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC 8.000	BETAC -5.000
□	14.000	ELV-1B .000	ELV-0B 3.000
		ELEVON 5.000	MACH .600
		PHI .000	DX .000
		DY 10.000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

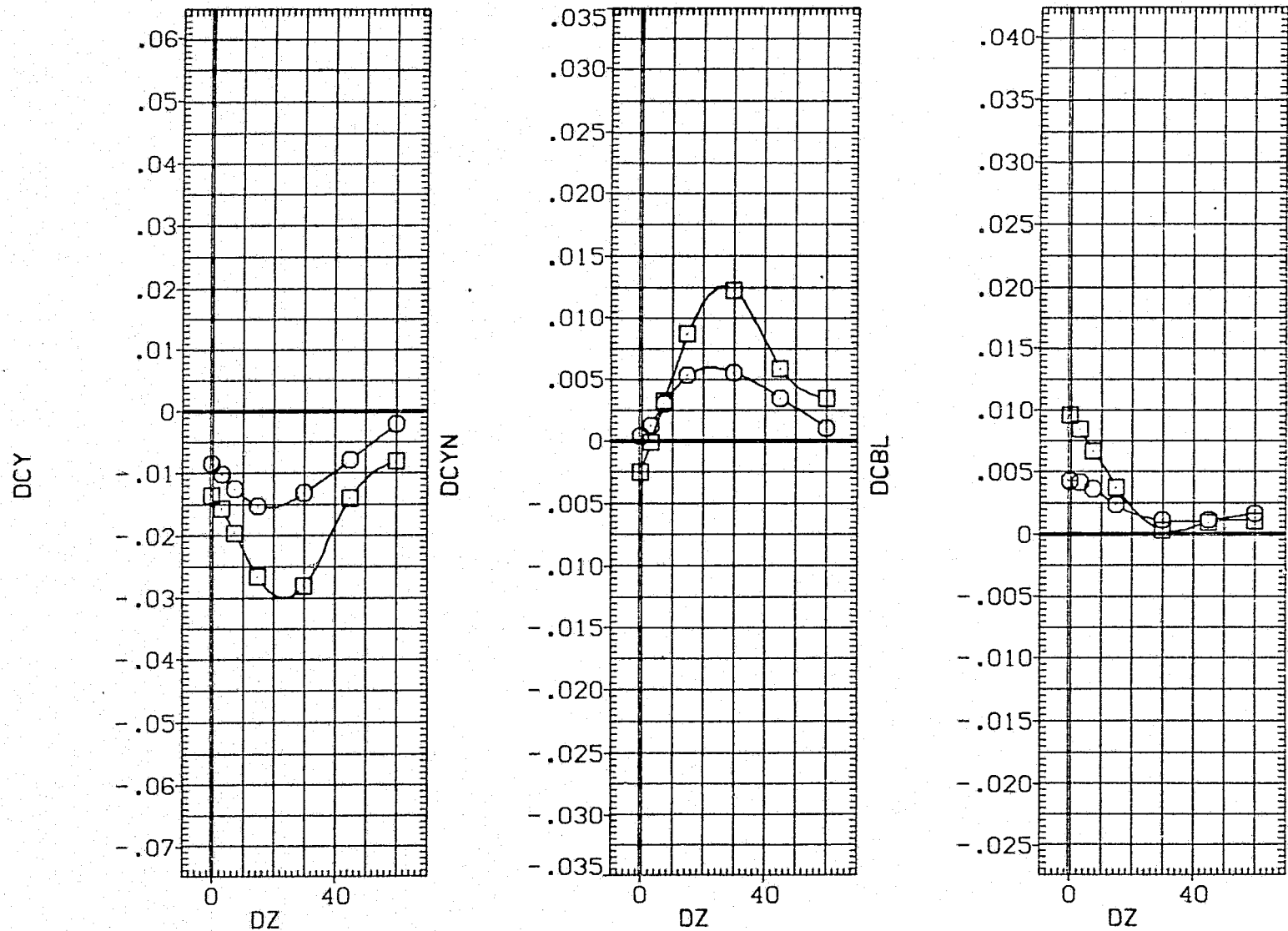


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	8.000	BETAC	-5.000
□	14.000	.000	ELV-0B	3.000
		5.000	MACH	.600
		.000	DX	.000
		10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

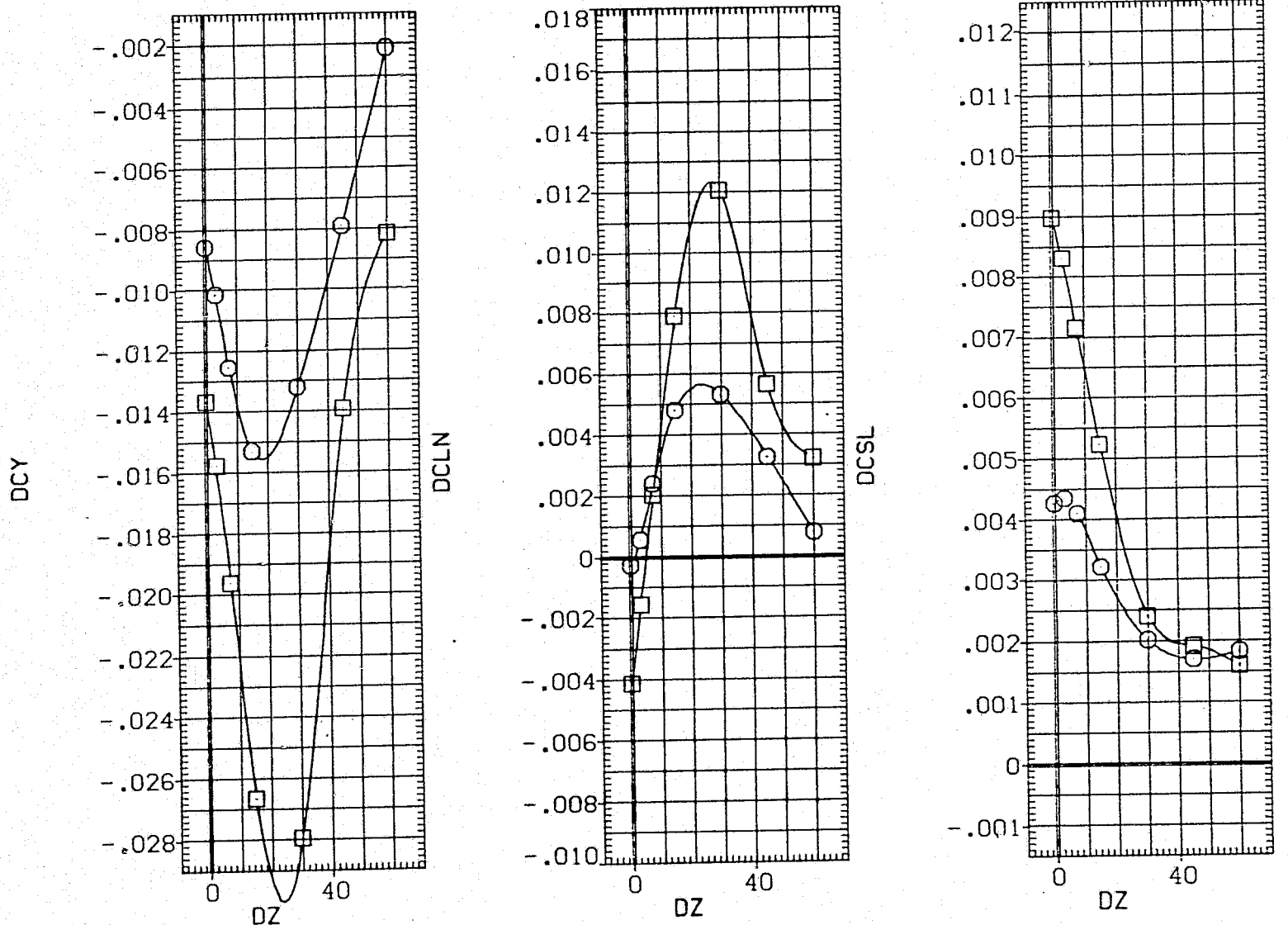


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-18	PARAMETRIC VALUES	ELV-08	
○	10.000	ELEVON	.000	3.000	
□	14.000	BETA0	5.000	.600	
		PHI	.000	BETAC	-5.000
		DX	10.000	DY	10.000
			ALPHAC	4.000	

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

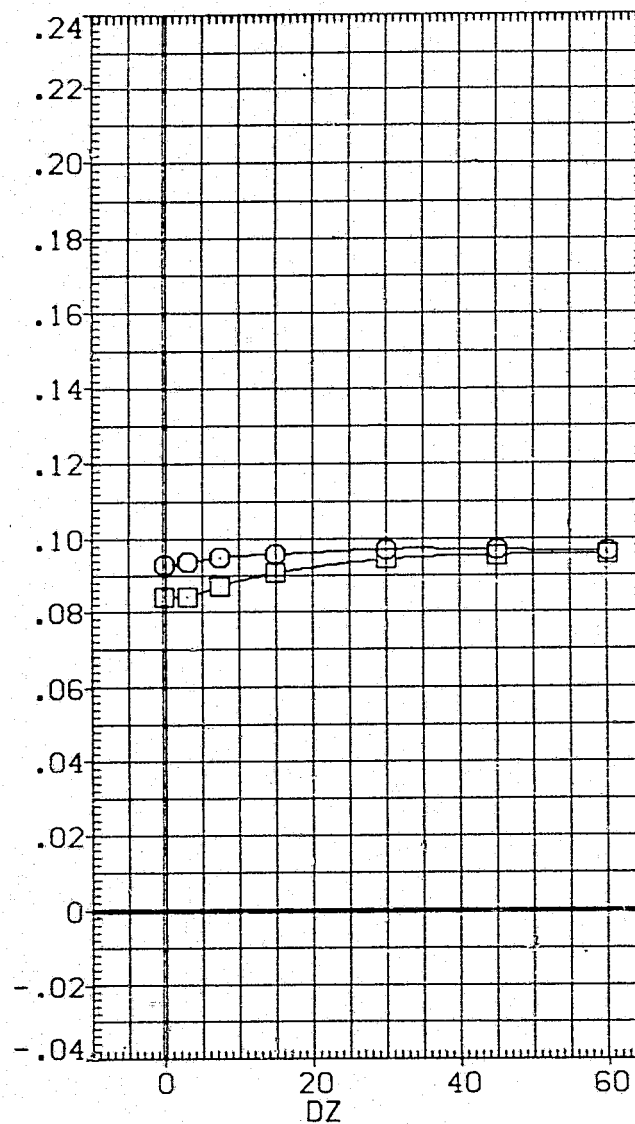
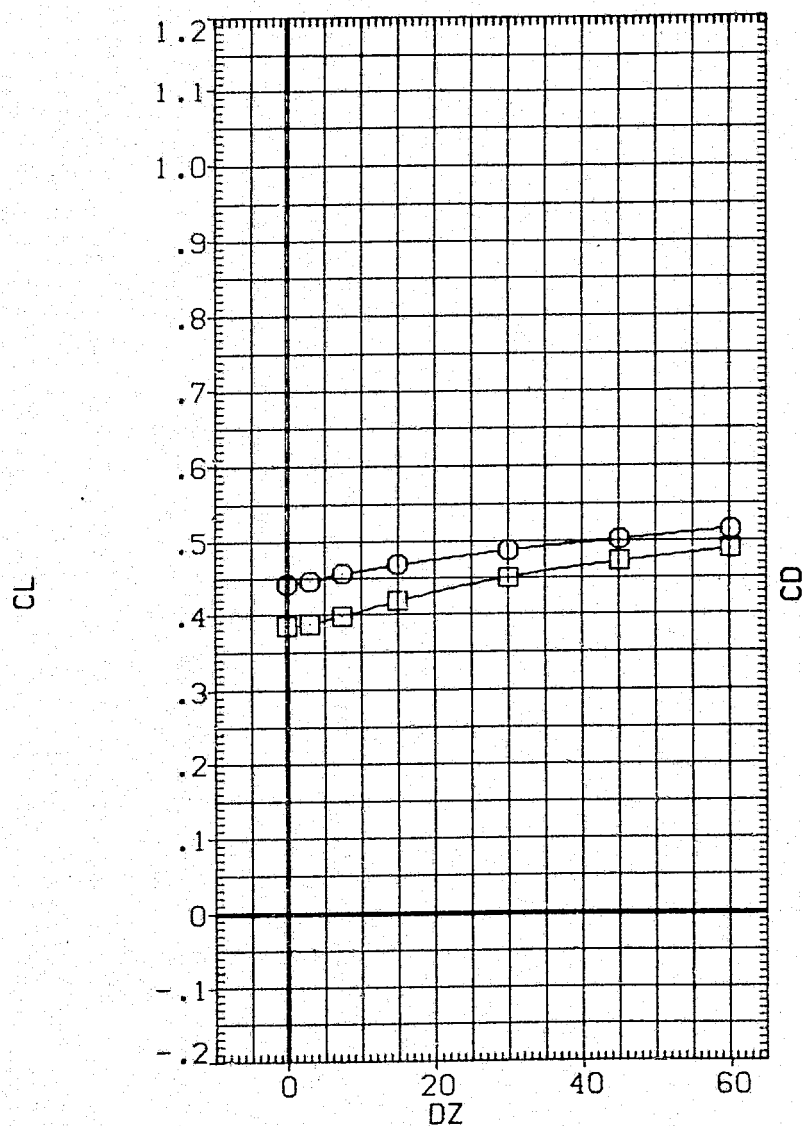


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000

ELV-IB

PARAMETRIC VALUES

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

.000

DY

10.000

DX

10.000

ALPHAC

4.000

REFERENCE INFORMATION

SREF 5500.0000

SQ.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

IN.YC

ZMRP 190.8000

IN.ZC

SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

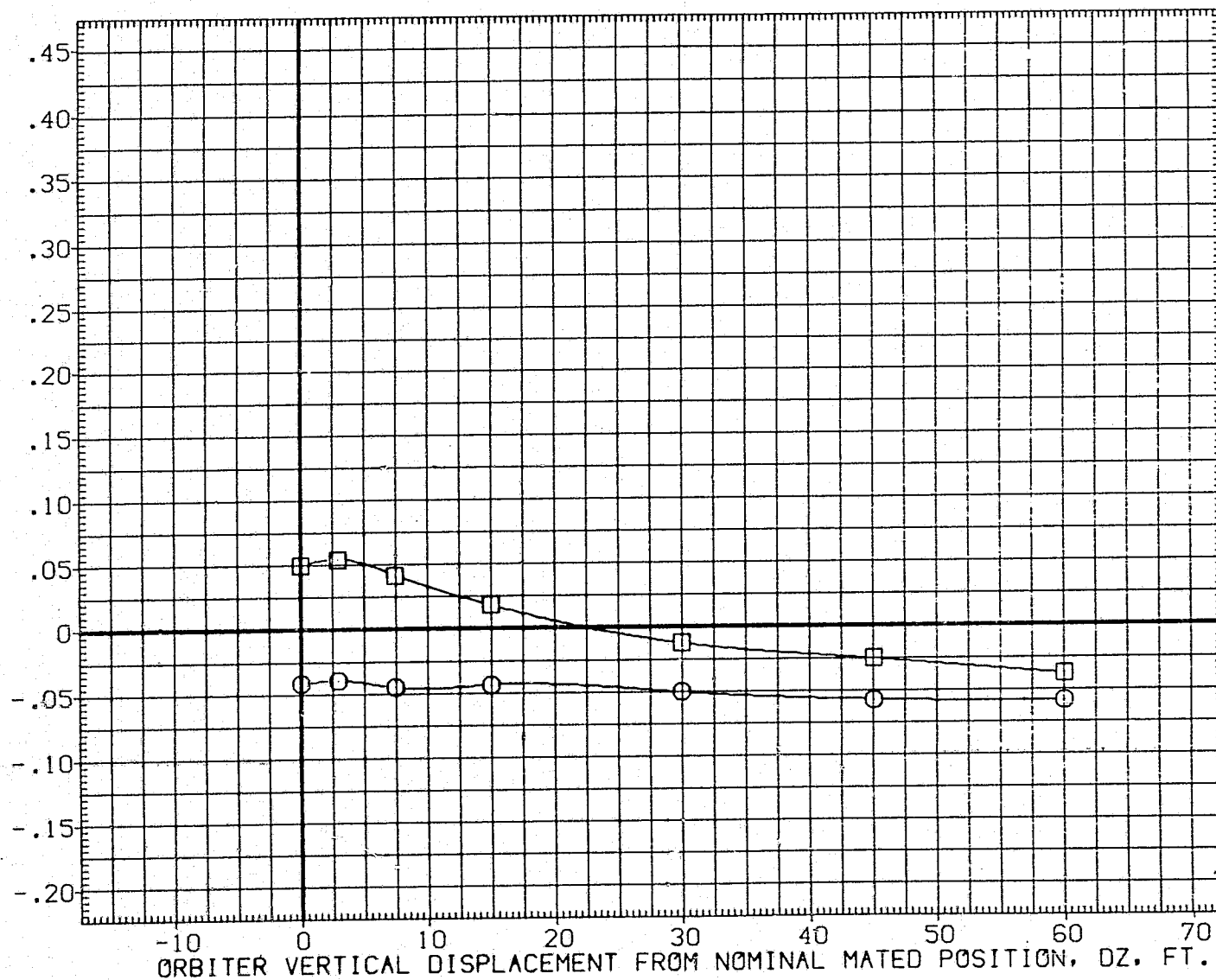


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGNO69)

SYMBOL		PARAMETRIC VALUES			
○	ALPHA0	ELV-1B	.000	ELV-0B	3.000
□	10.000	ELEVON	5.000	MACH	.600
	14.000	BETA0	.000	BETAC	-5.000
		PHI	.000	DY	10.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	190.8000	IN.ZC
SCALE	.0300	

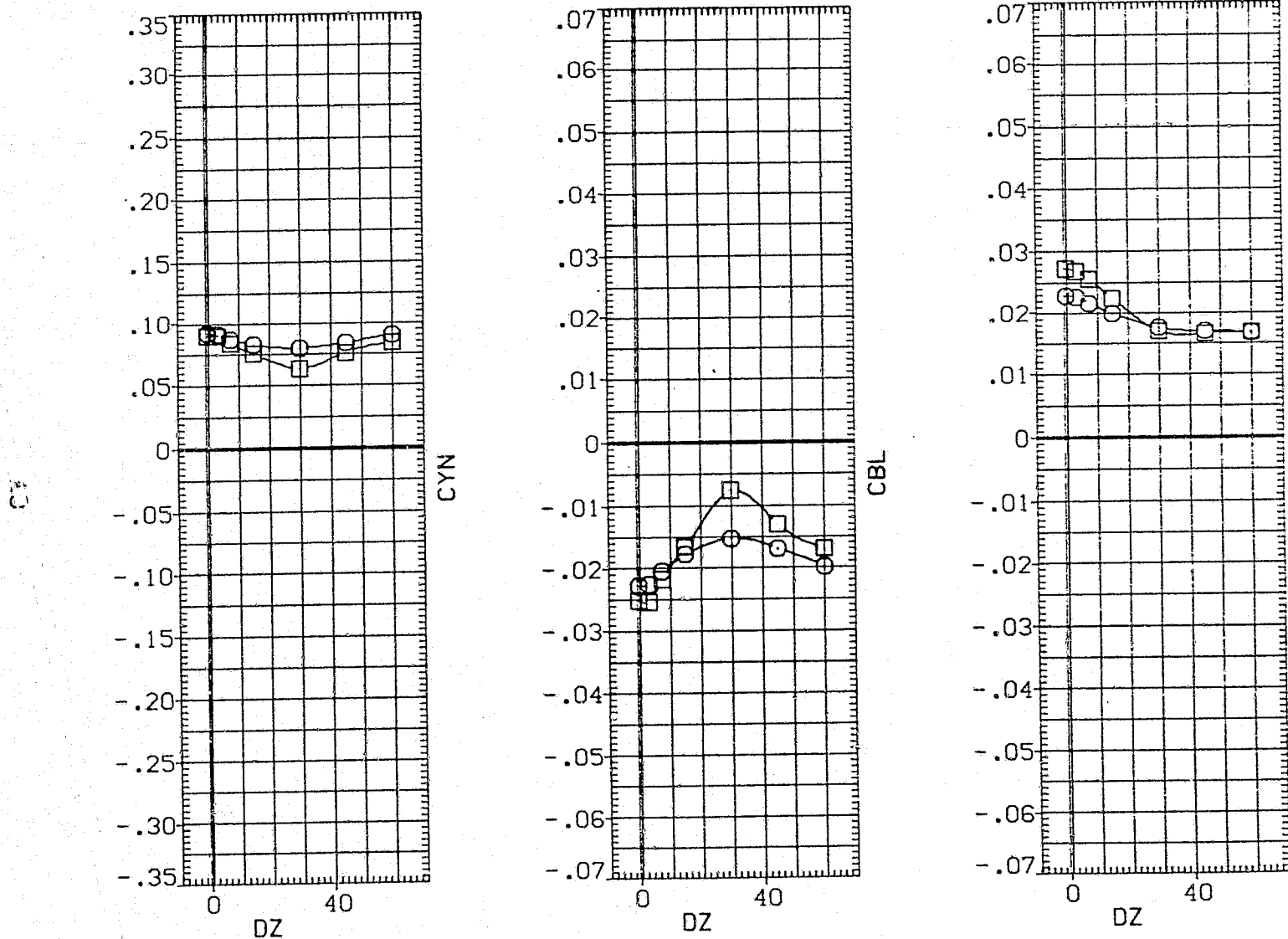


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-18	PARAMETRIC VALUES	ELV-08	
○	10.000	ELEVON	.00	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	OY	-5.000
		DX	10.000	ALPHAC	10.000
					4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	190.8000	IN.ZC
SCALE	.0300	

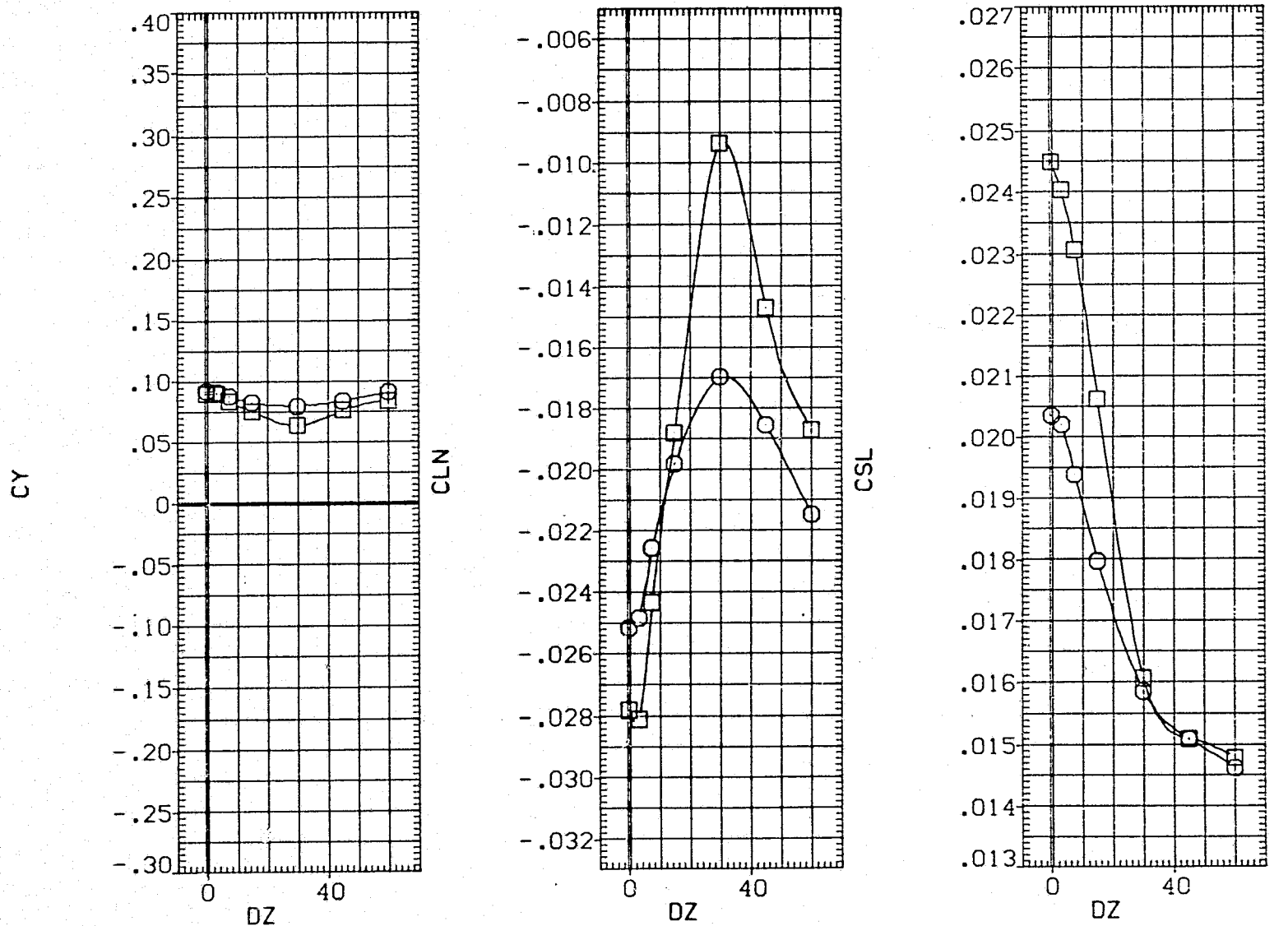


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000
14.000

PARAMETRIC VALUES

ALPHA0	ALPHAC	4.000	BETAC	-5.000
	ELV-18	.000	ELV-08	3.000
	ELEVON	5.000	MACH	.600
	PHI	.000	DX	10.000
	DY	10.000	BETA0	.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

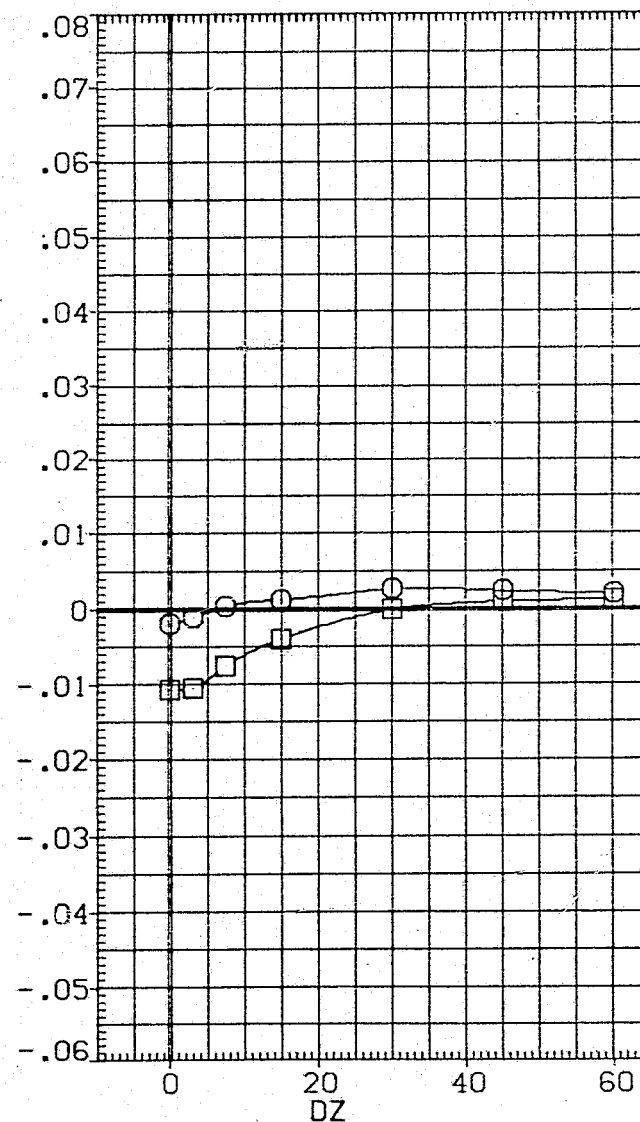
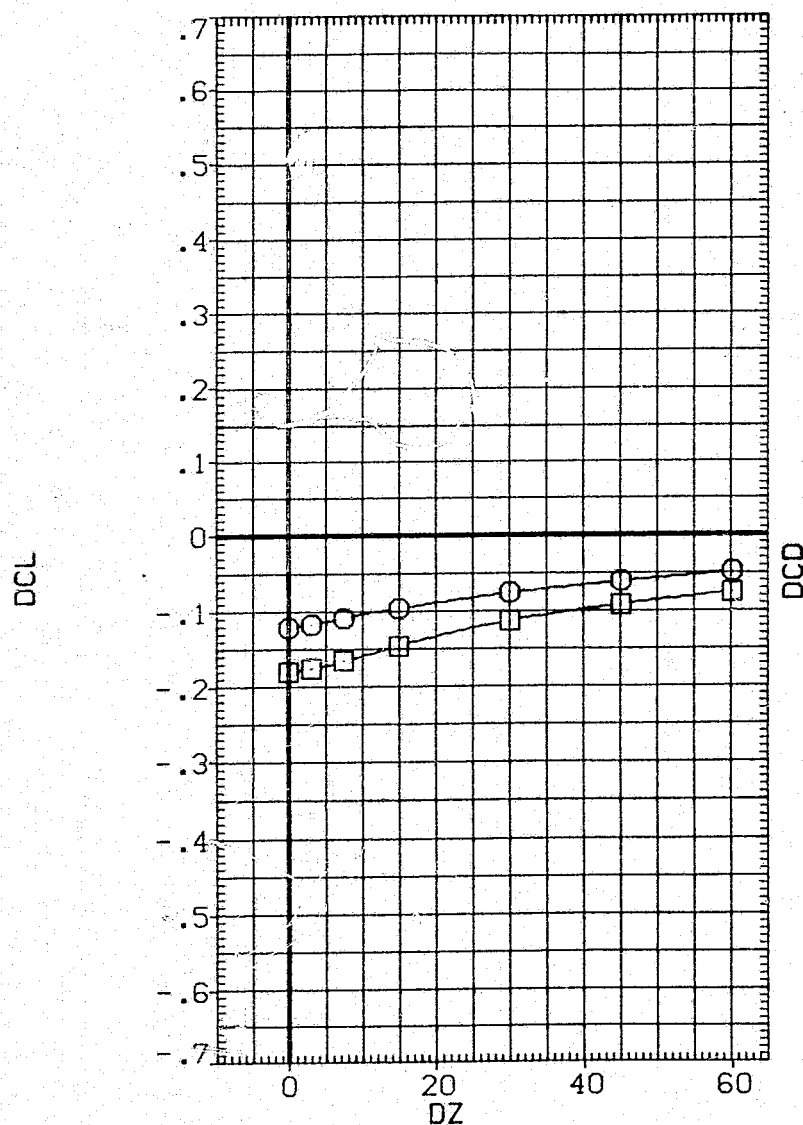


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

BETAC

-5.000

ELV-OB

3.000

MACH

.600

DX

10.000

BETA0

.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

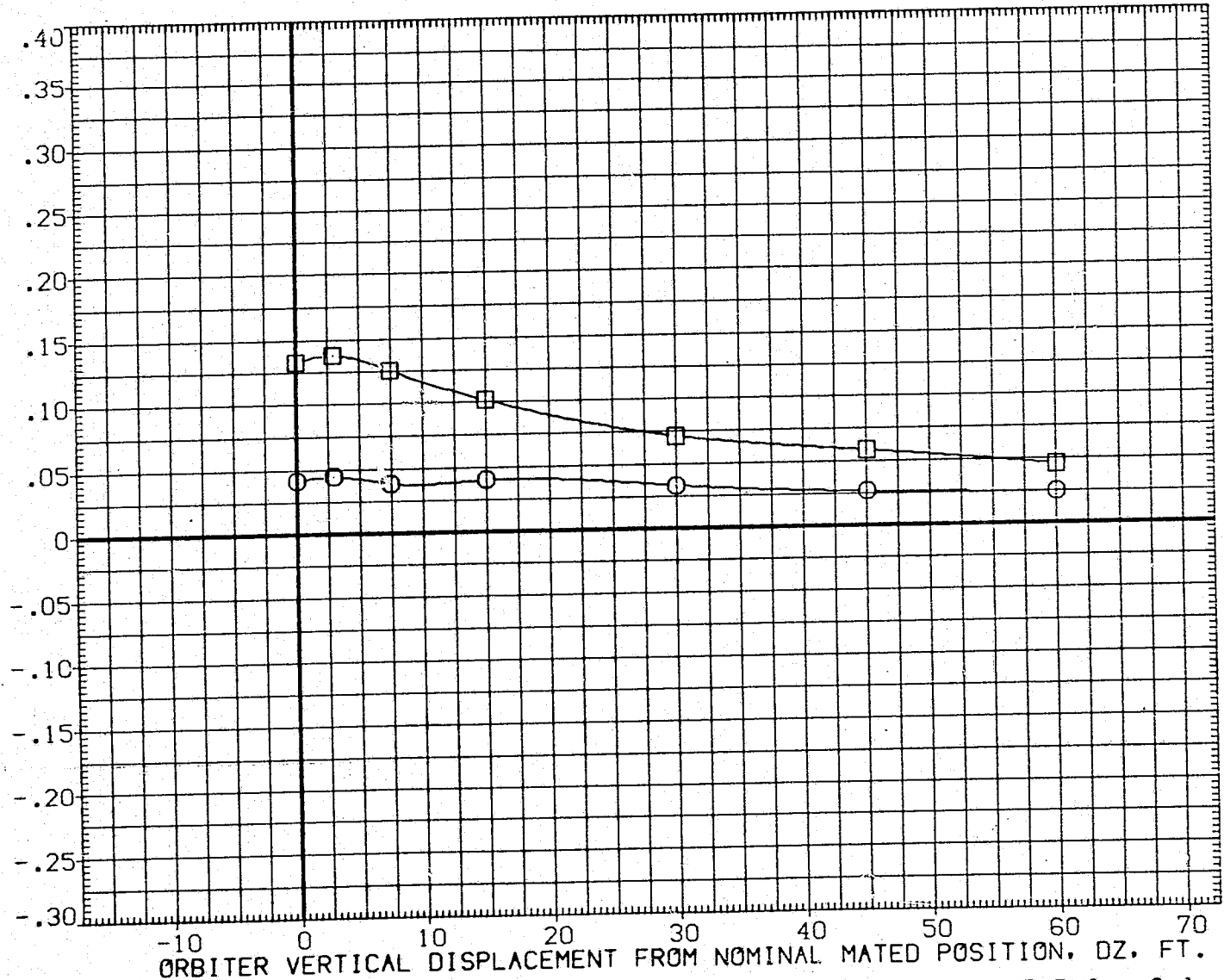


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 (747/1 01 S1) - (747/1)

D/S (069 - 034) (UGN069)

SYMBOL	PARAMETRIC VALUES			
	ALPHA0	ALPHAC	BETAC	BETAC
○	10.000	ELV-IB	.000	ELV-OB
□	14.000	ELEVON	5.000	MACH
		PHI	.000	DX
		DY	10.000	BETA0
				.000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1332.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

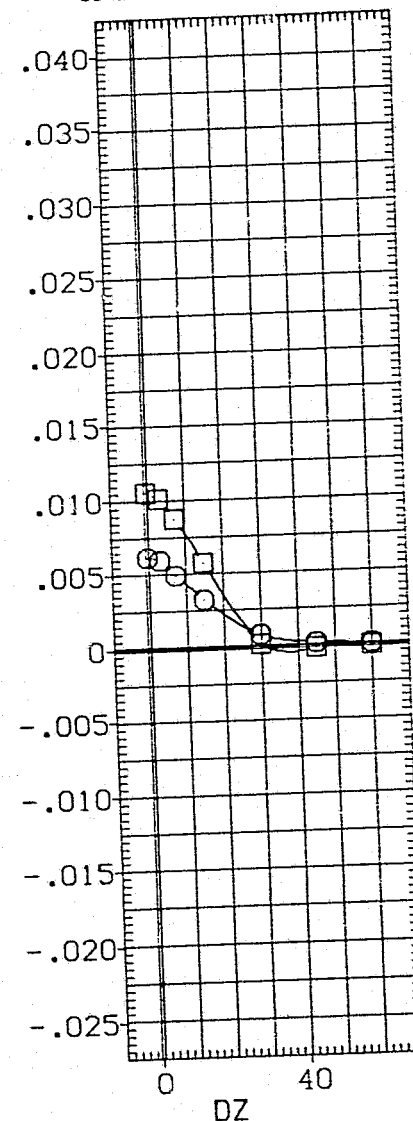
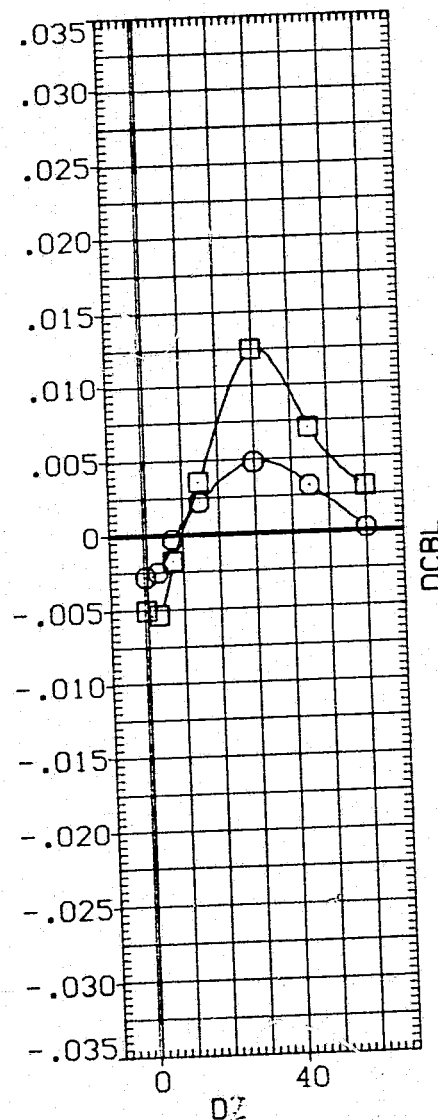
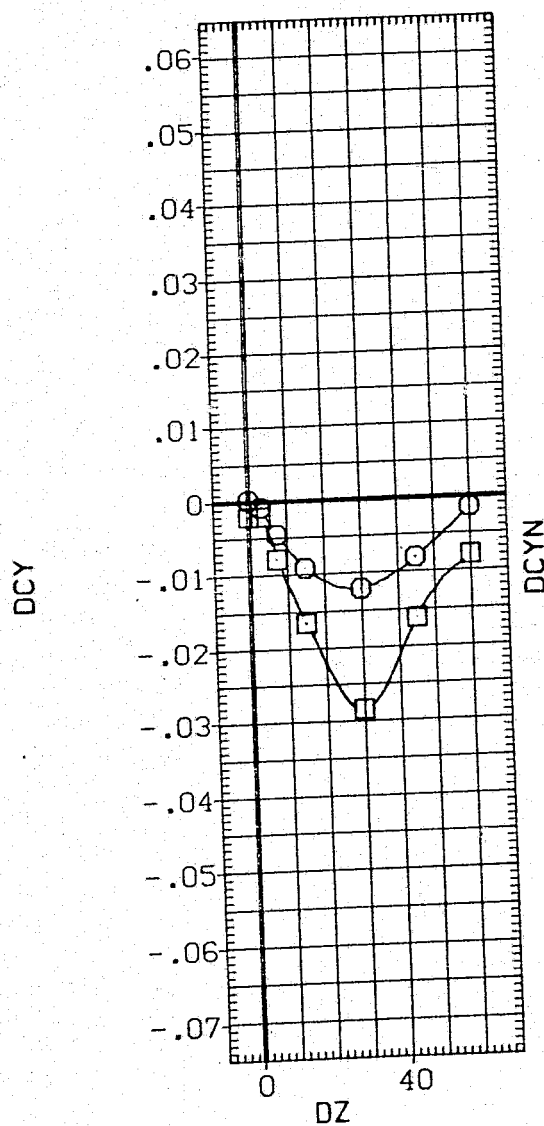


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC -5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	190.8000	IN.ZC
SCALE	.0300	

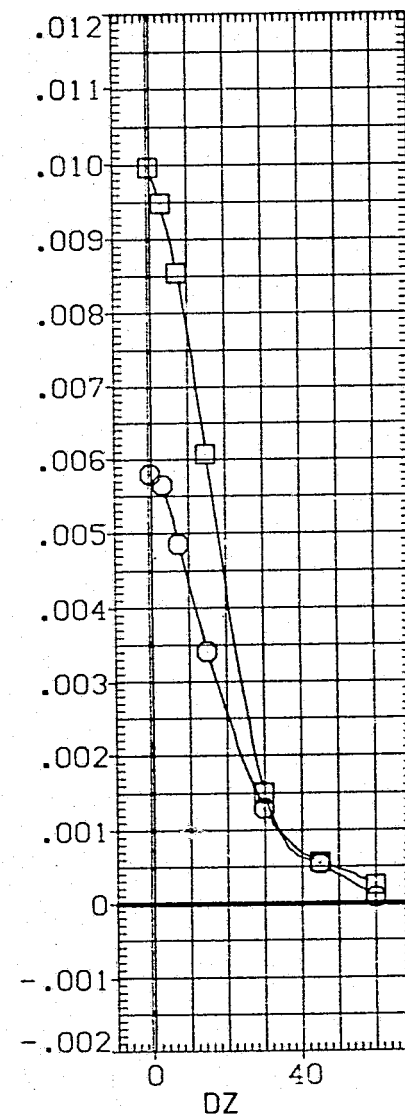
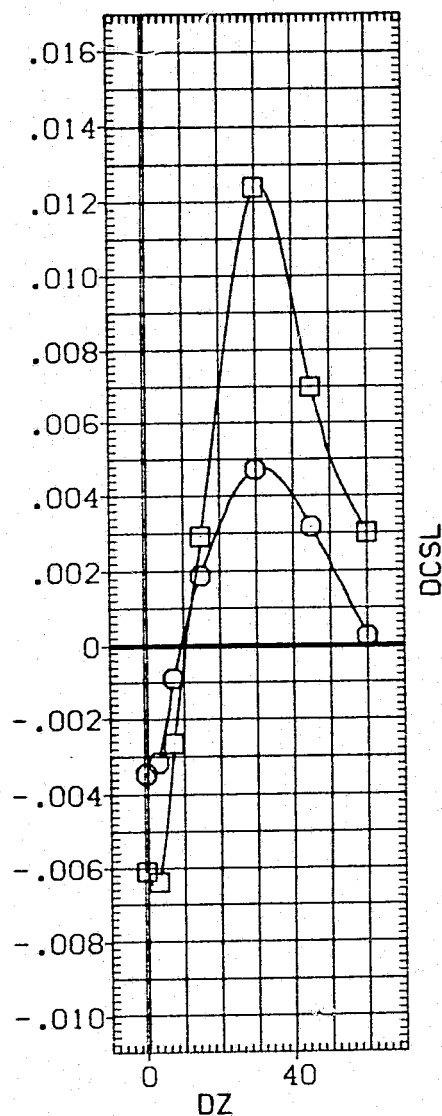
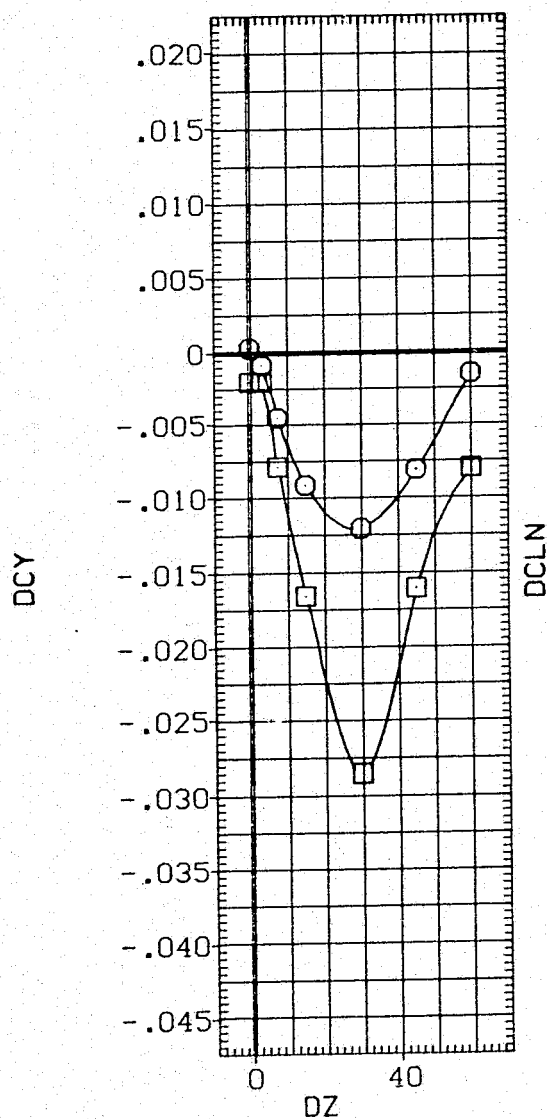


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-1B

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

.000

10.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

-5.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

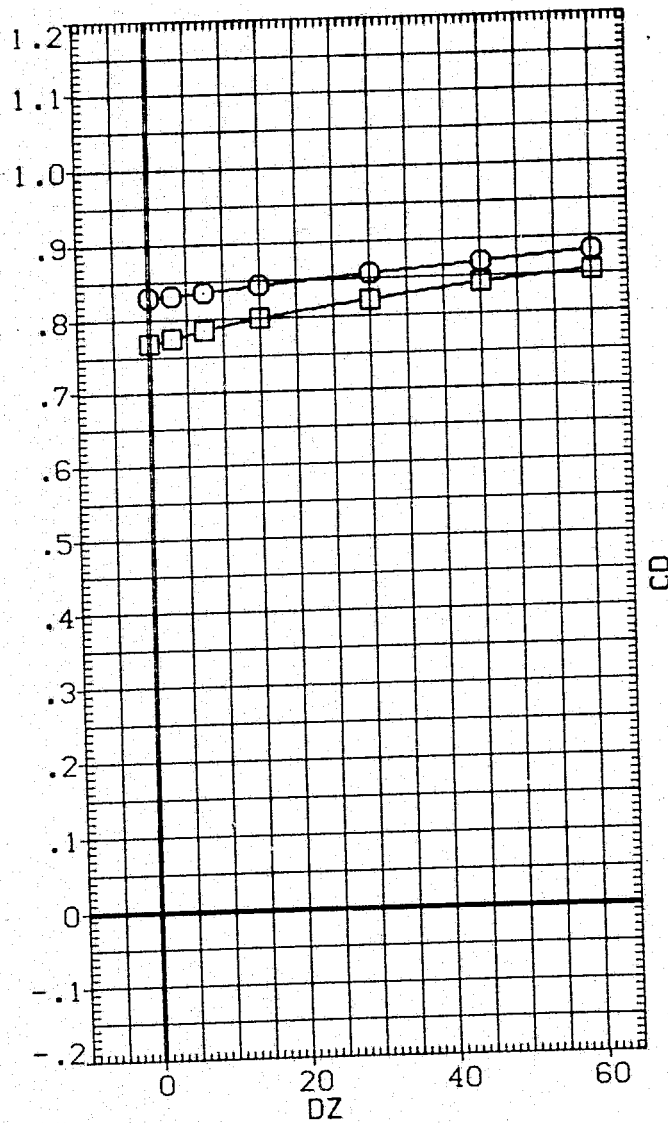
IN.

IN.XC

IN.YC

IN.ZC

CL



CD

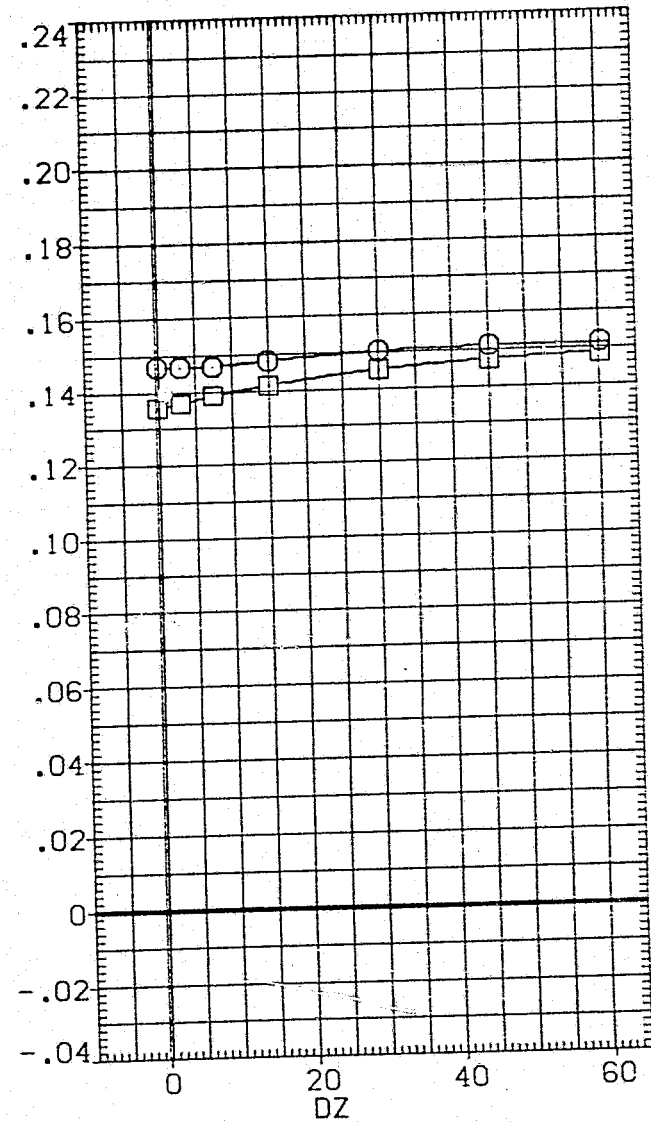


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

□ ○

ALPHA0

10.000

ELV-1B

PARAMETRIC VALUES

.000

ELV-0B

3.000

14.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

.000

DY

10.000

DX

10.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

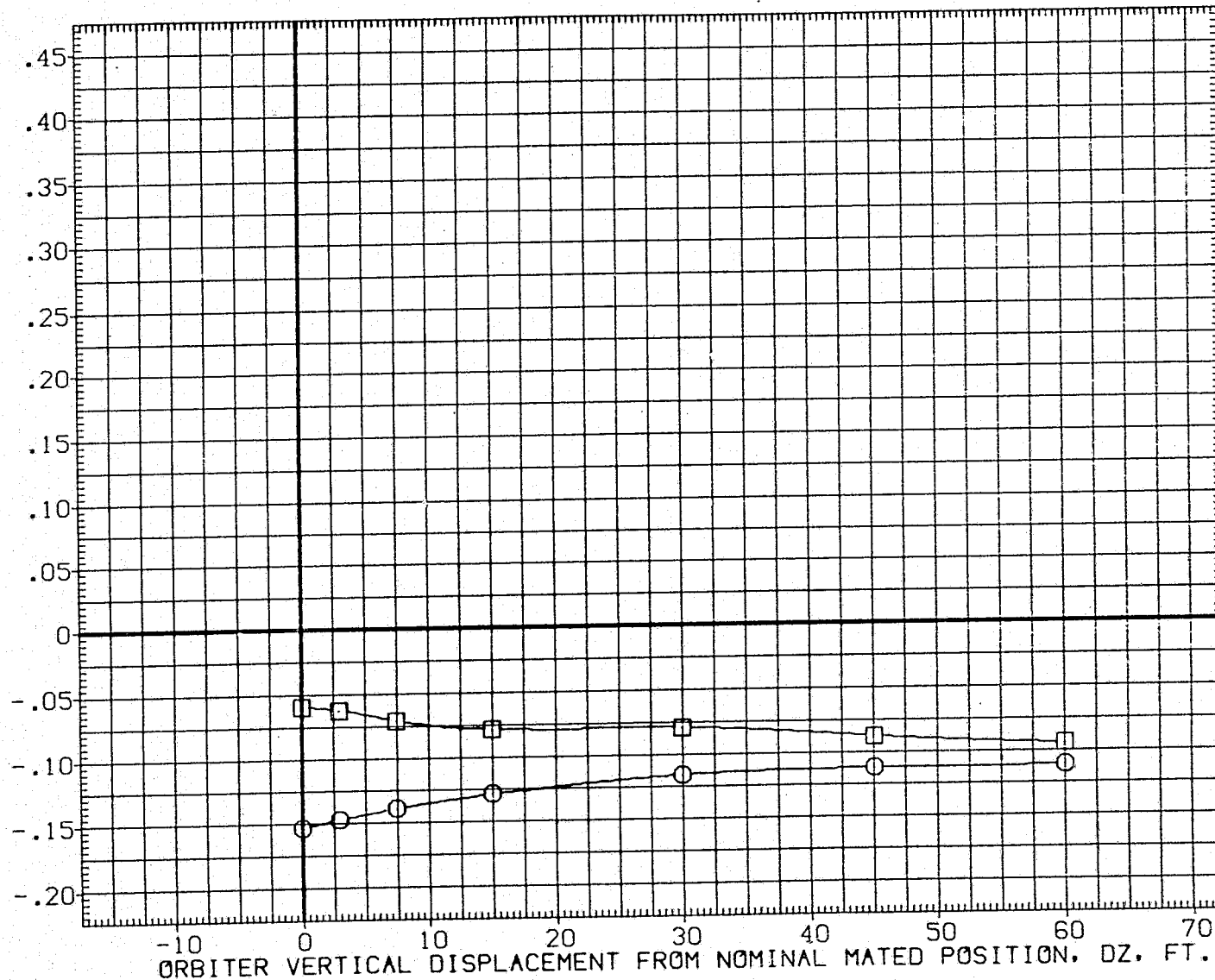


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB
○	10.000		.000	3.000
□	14.000	ELEVON	5.000	MACH
		BETA0	.000	BETAC
		PHI	.000	DY
		DX	10.000	ALPHAC
				8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

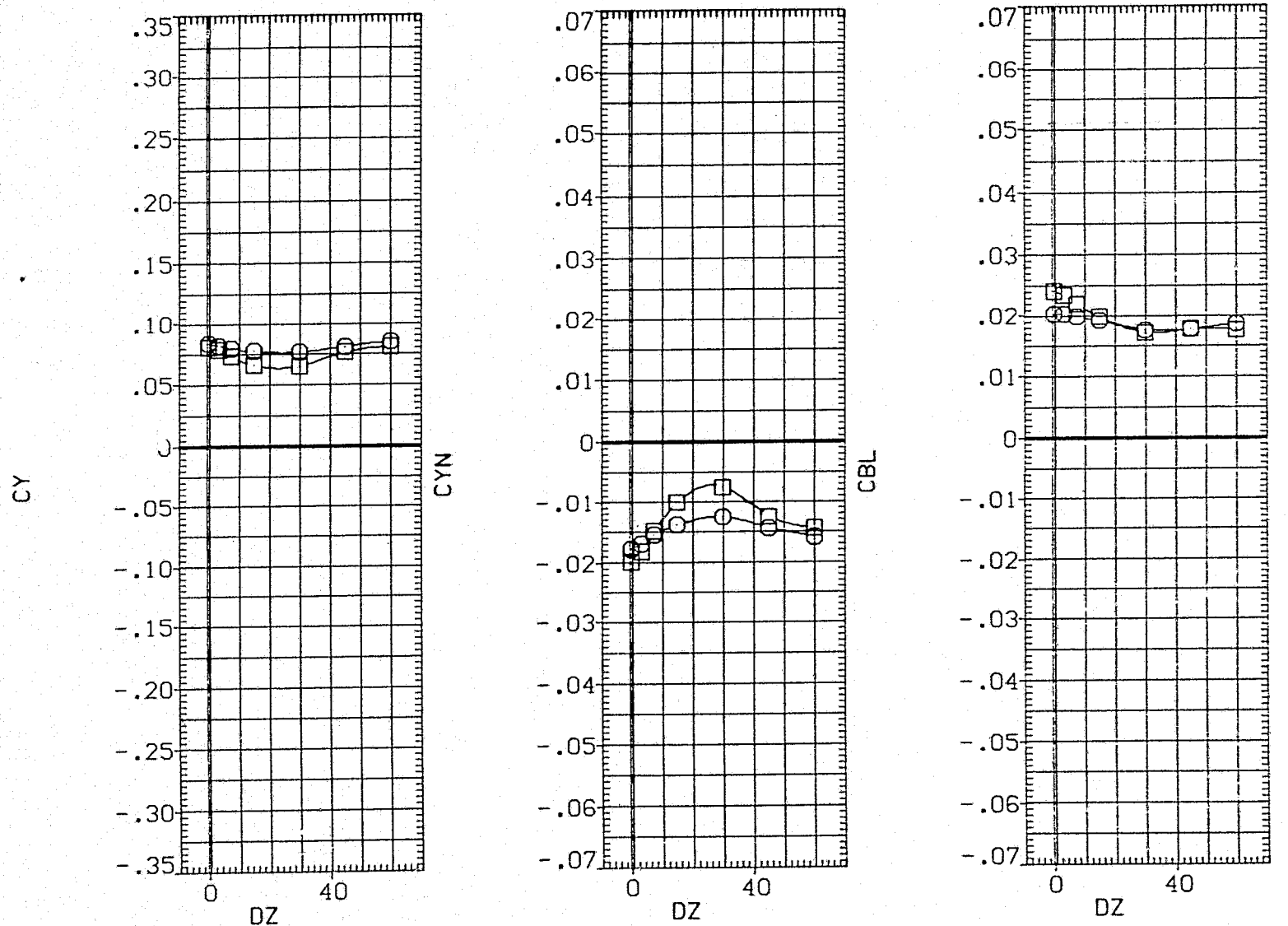


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-1B

ELEV0N

BETA0

PHI

DX

PARAMETRIC VALUES

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

-5.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

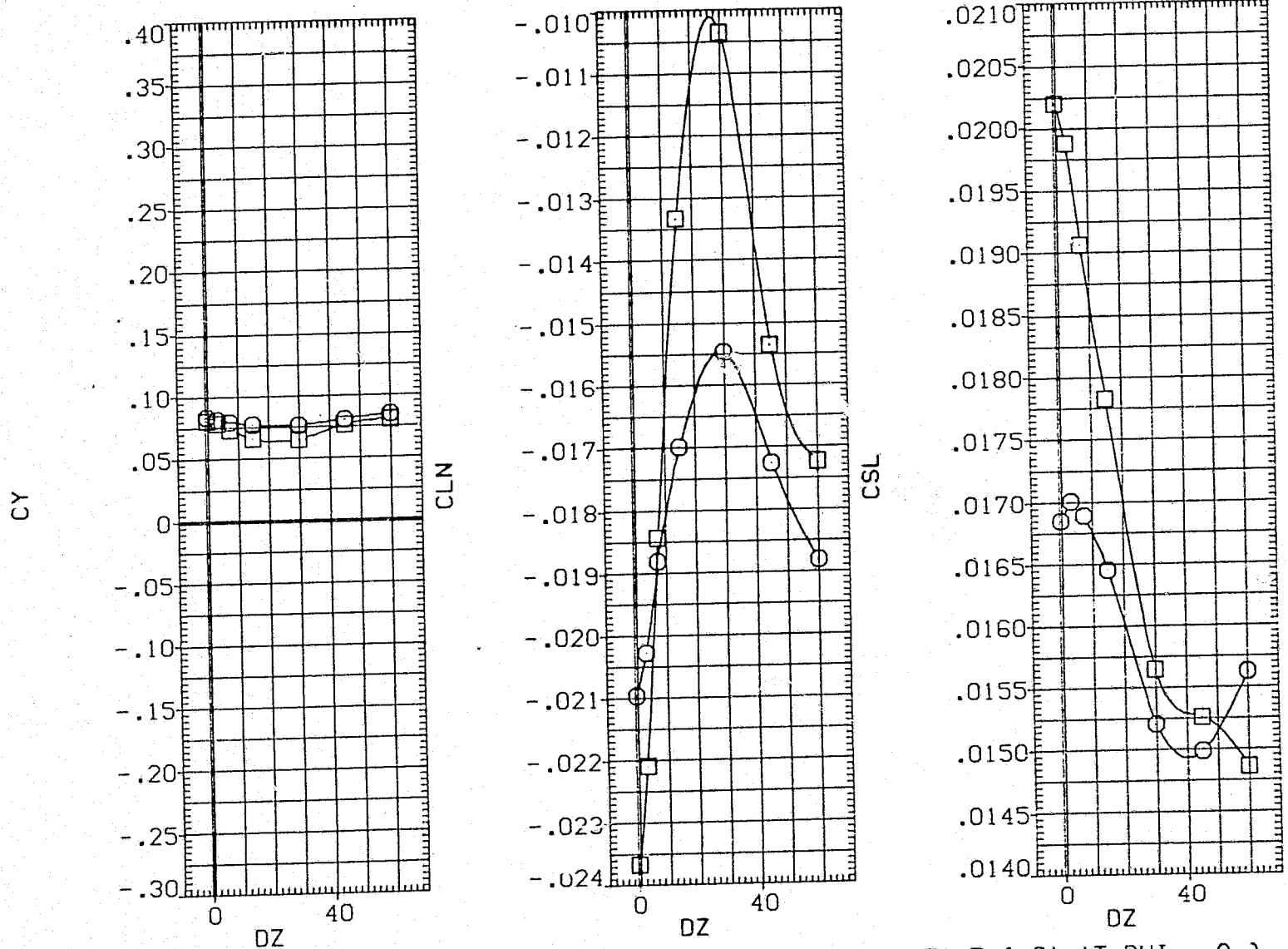


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 (74-1 01 S1) - (747/1)

D/S (071 - 034) (UGN071)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	-5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

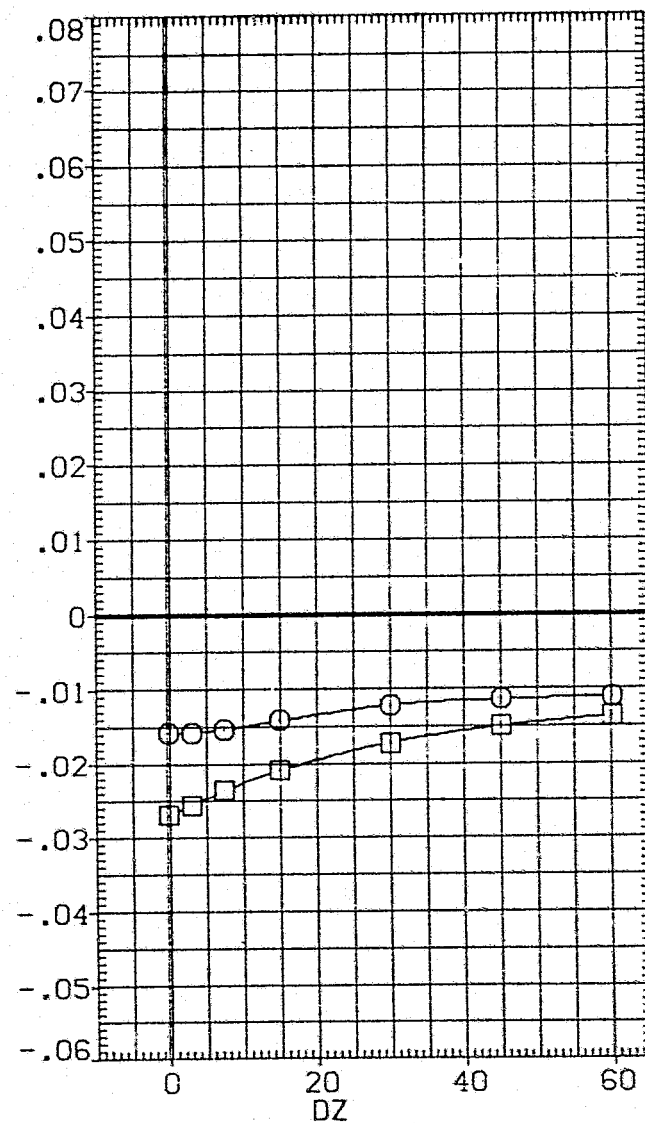
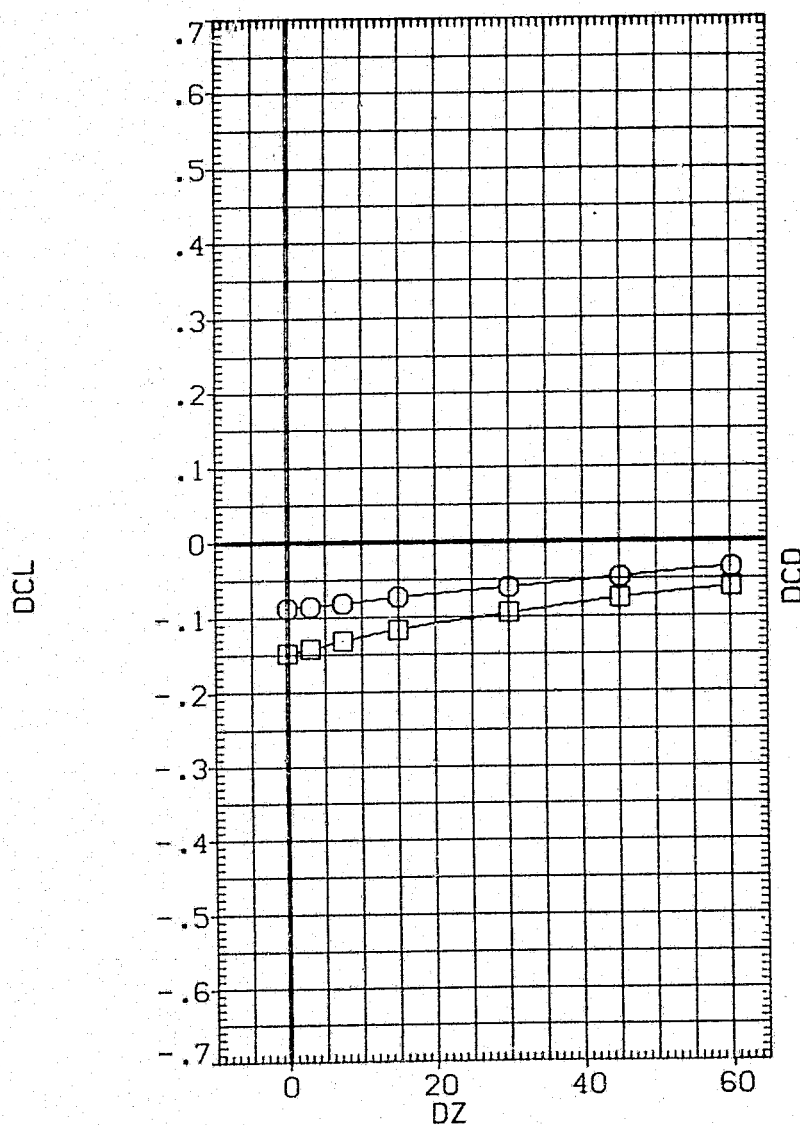


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHA0

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

BETAC

-5.000

ELV-OB

3.000

MACH

10.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000

50.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

IN.YC

ZMRP .190.8000

IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

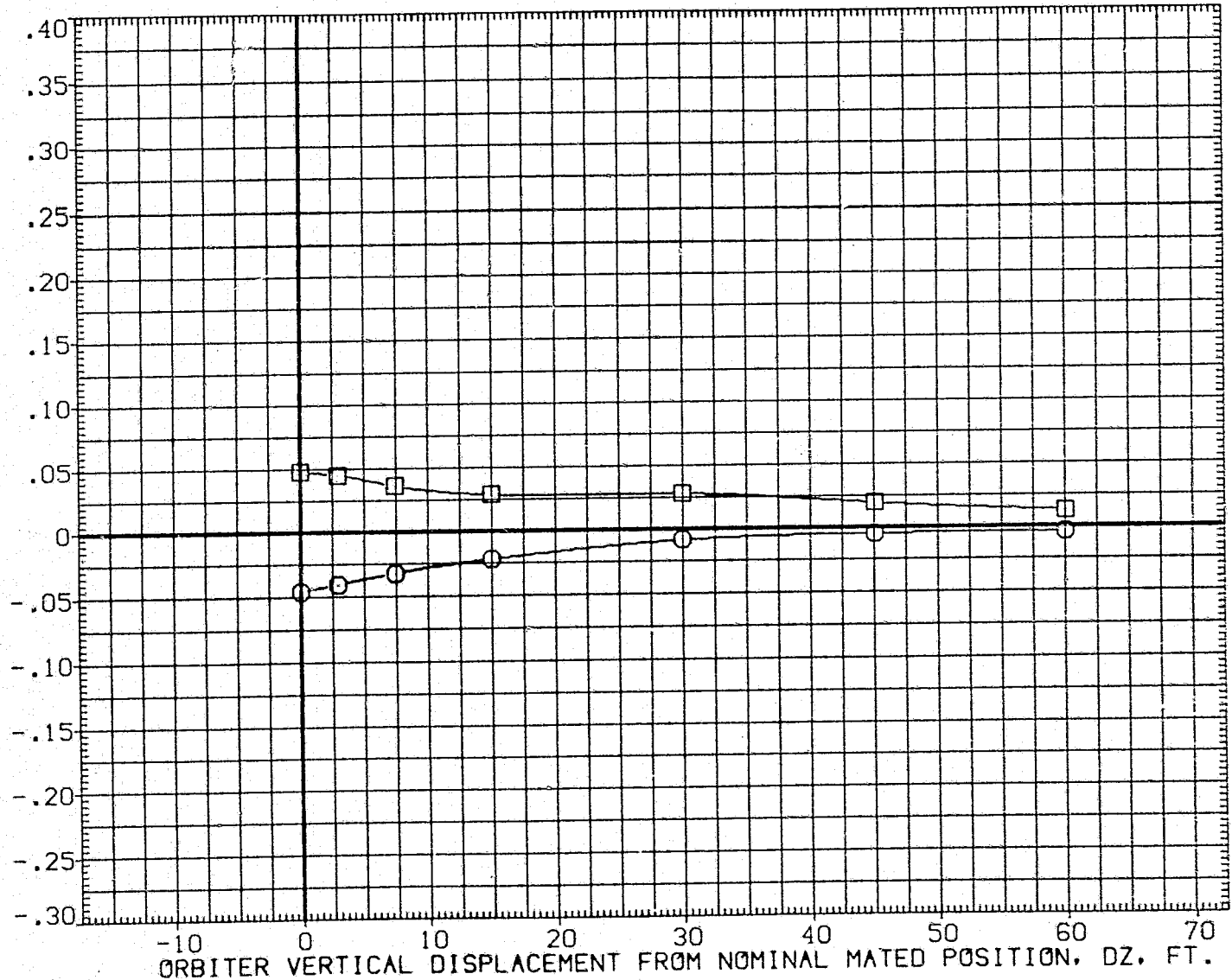


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC -5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

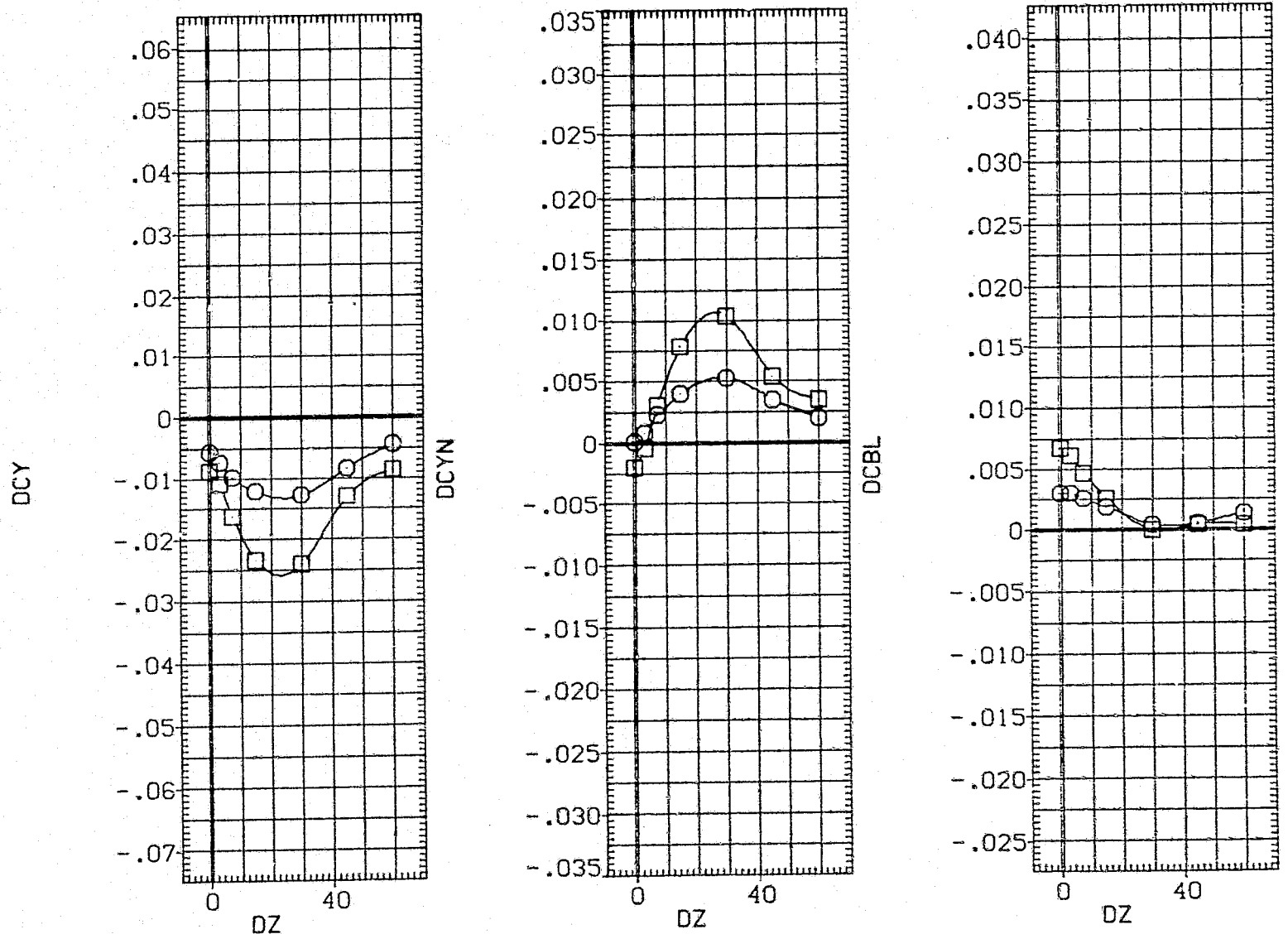


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	-5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

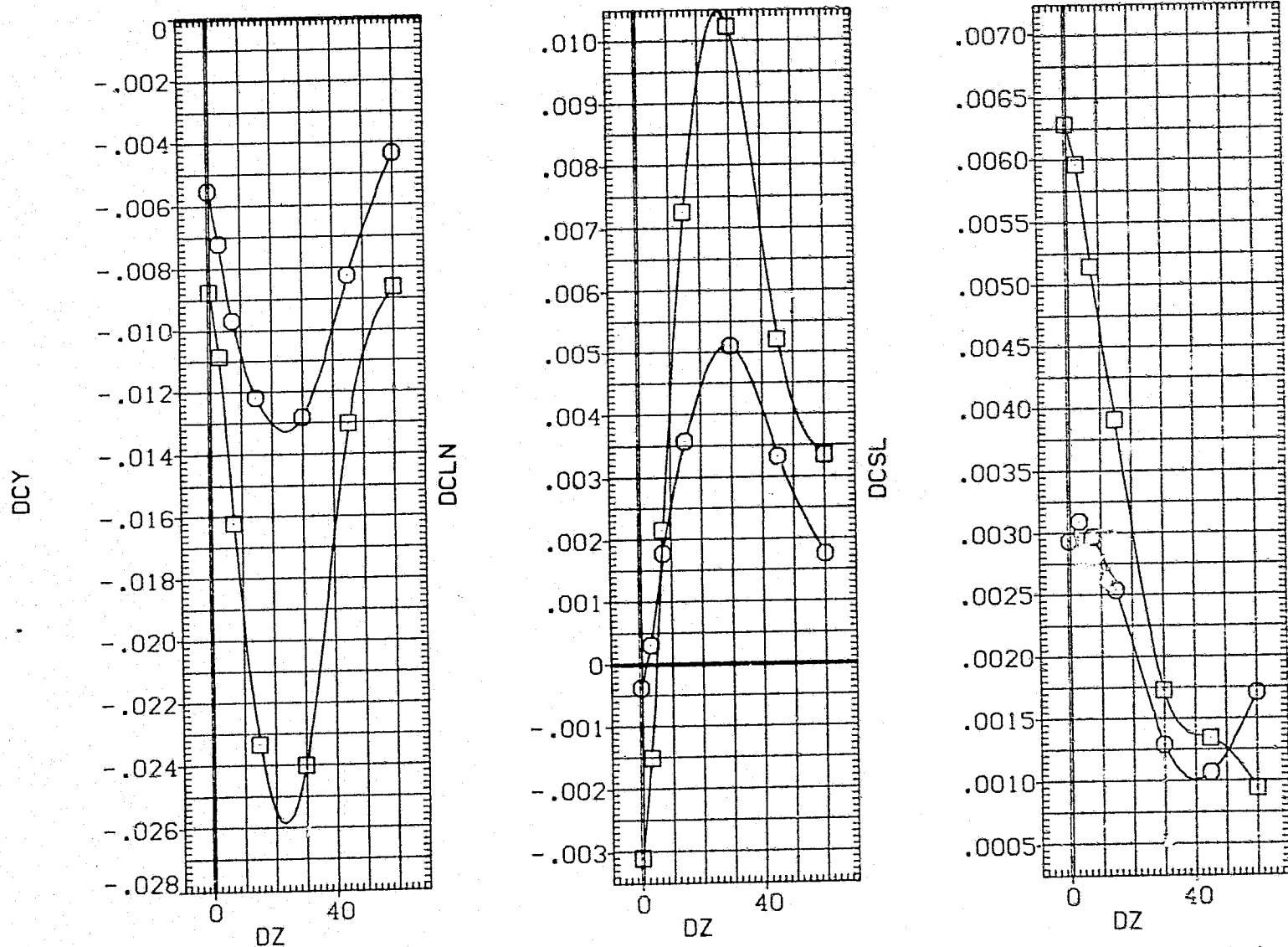


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	BETAC	PARAMETRIC VALUES	ELV-1B	
○	6.000	.000	ELEVON	5.000	
□	10.000	3.000	BETA0	.000	
◇	14.000	.600	DY	.000	
		PHI	.000	DX	.000
		ALPHAC	.000		

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

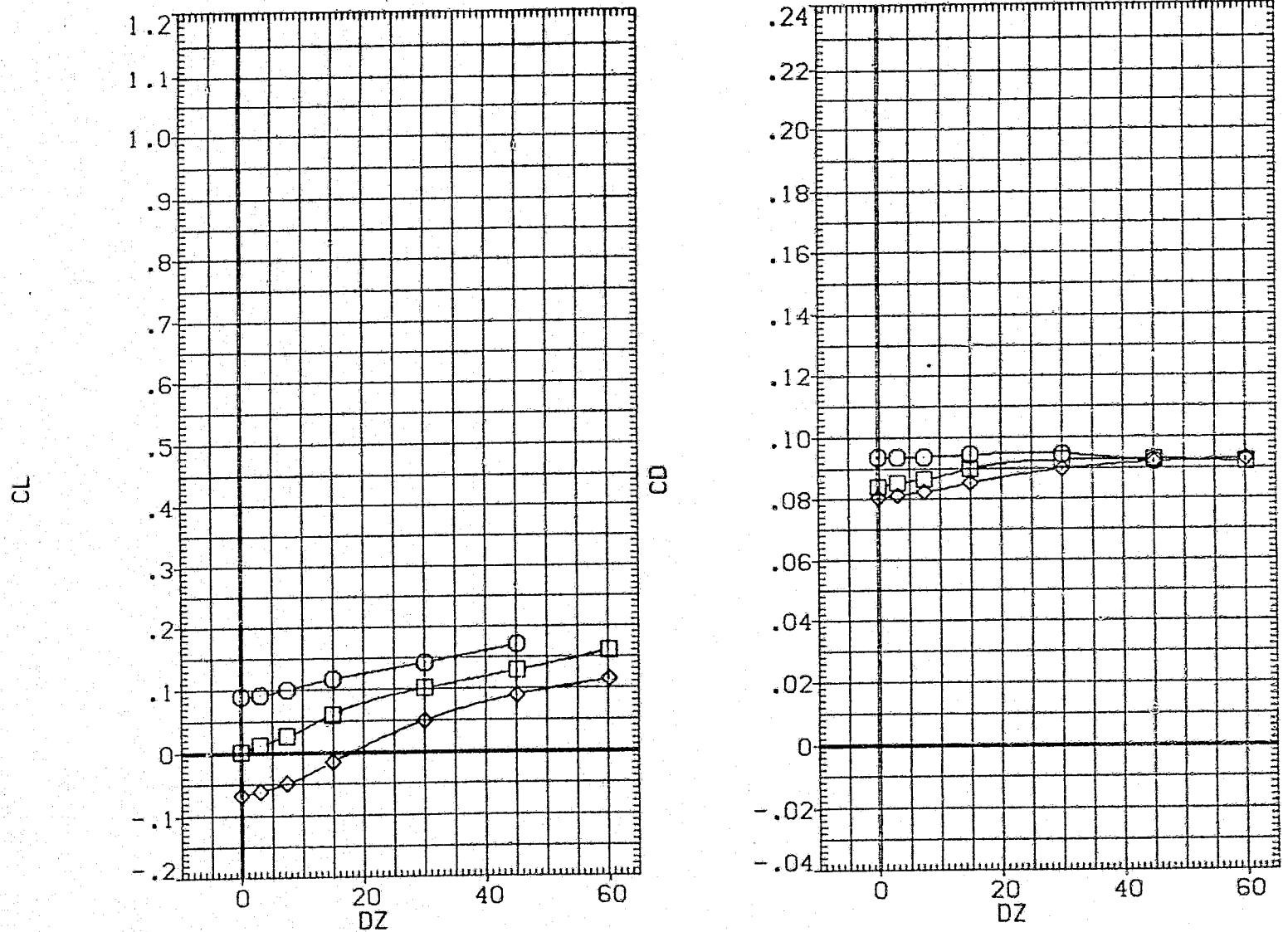


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	6.000	BETAC	.000	ELV-IB	.000
□	10.000	ELV-OB	3.000	ELEVON	5.000
◇	14.000	MACH	.600	BETA0	.000
		PHI	.000	DY	.000
		ALPHAC	.000	DX	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

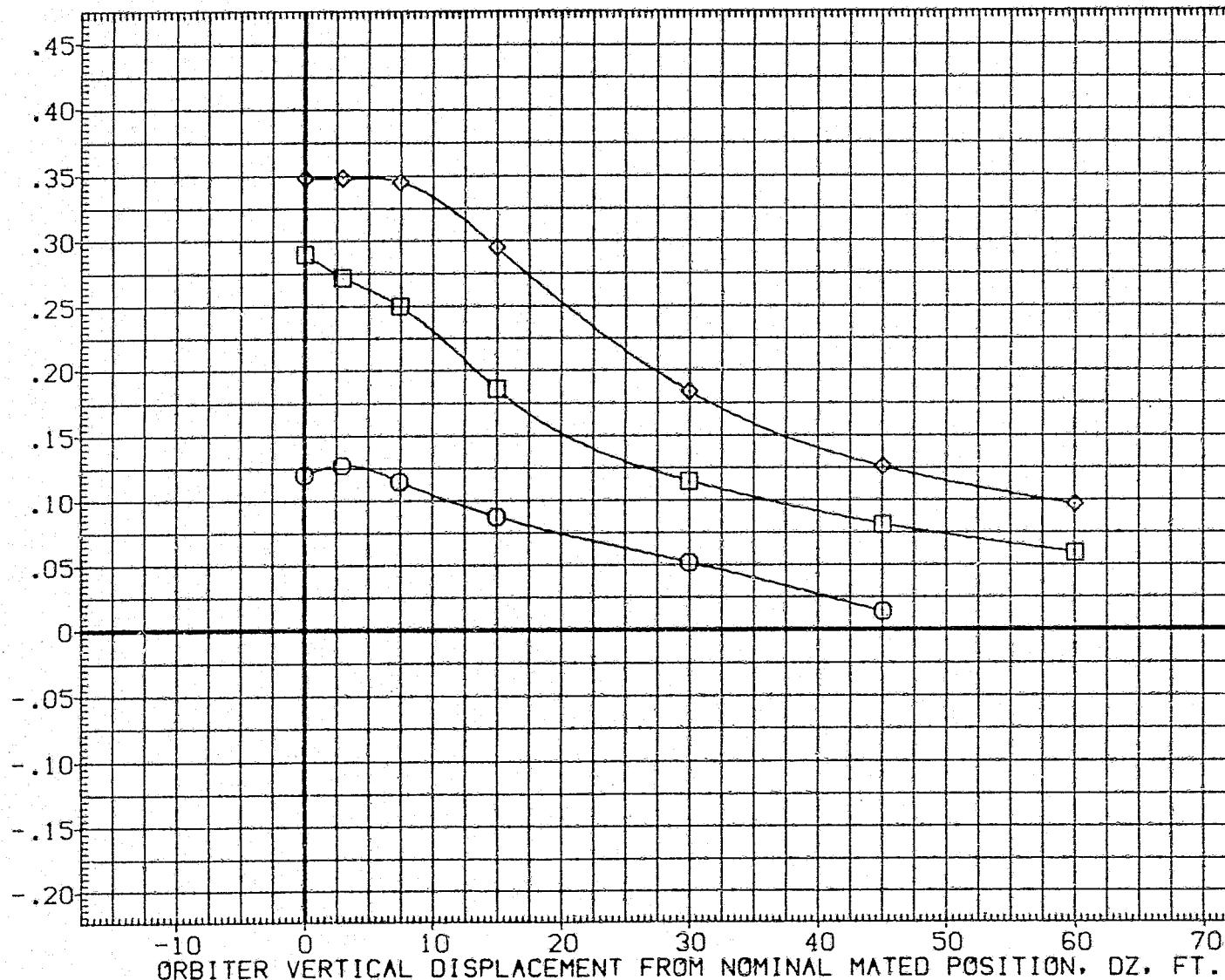


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA(1GN049)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
○	6.000	BETAC	.000	ELV-1B	.000
□	10.000	ELV-0B	3.000	ELEVON	5.000
◇	14.000	MACH	.600	BETA0	.000
		PHI	.000	DY	.000
		ALPHAC	.000	DX	.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

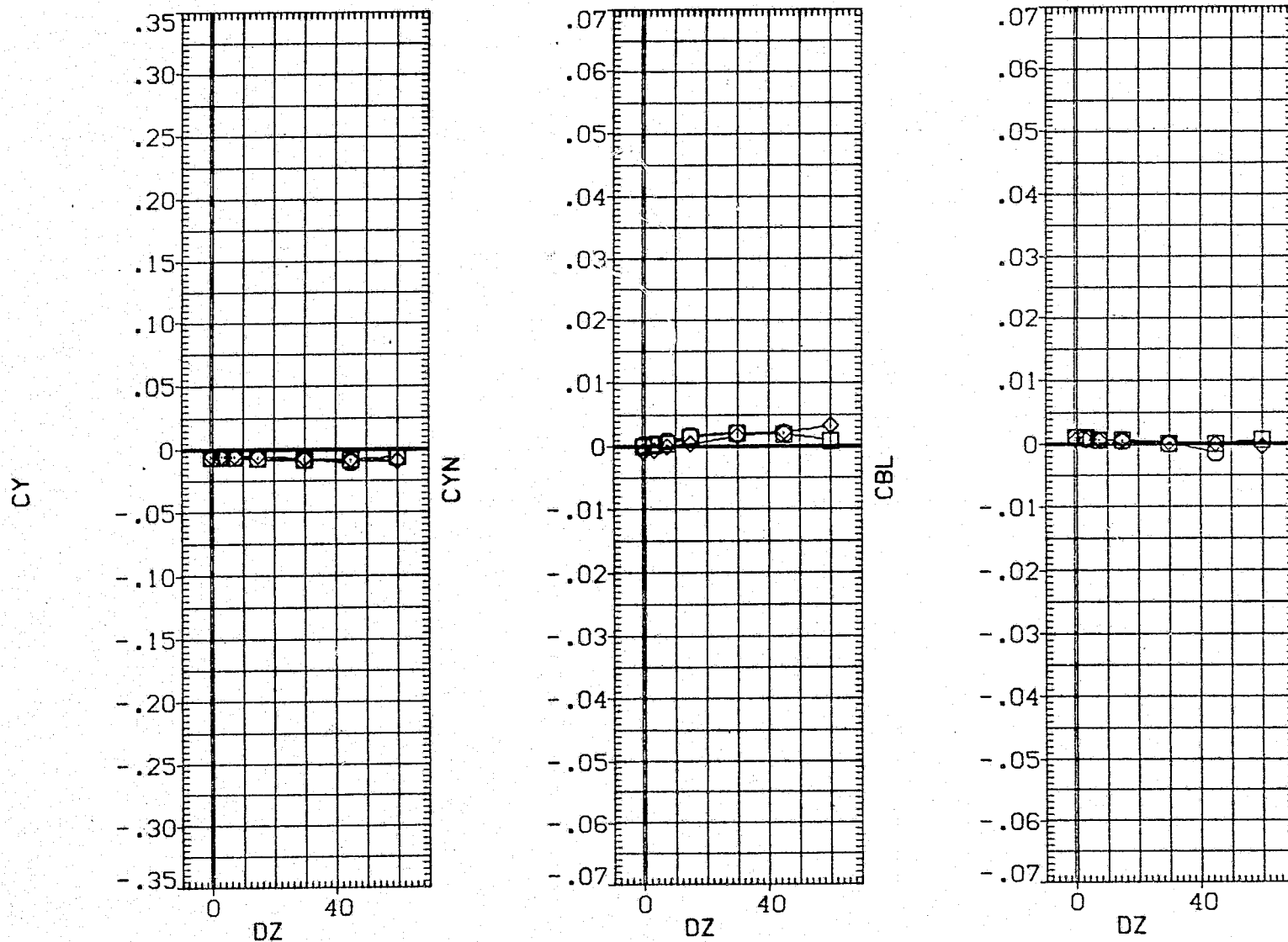


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	BETAC	PARAMETRIC VALUES	ELV-IB	
○	6.000		.000	.000	
□	10.000	ELV-OB	3.000	ELEVON	5.000
◇	14.000	MACH	.600	BETA0	.000
		PHI	.000	DY	.000
		ALPHAC	.000	DX	.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

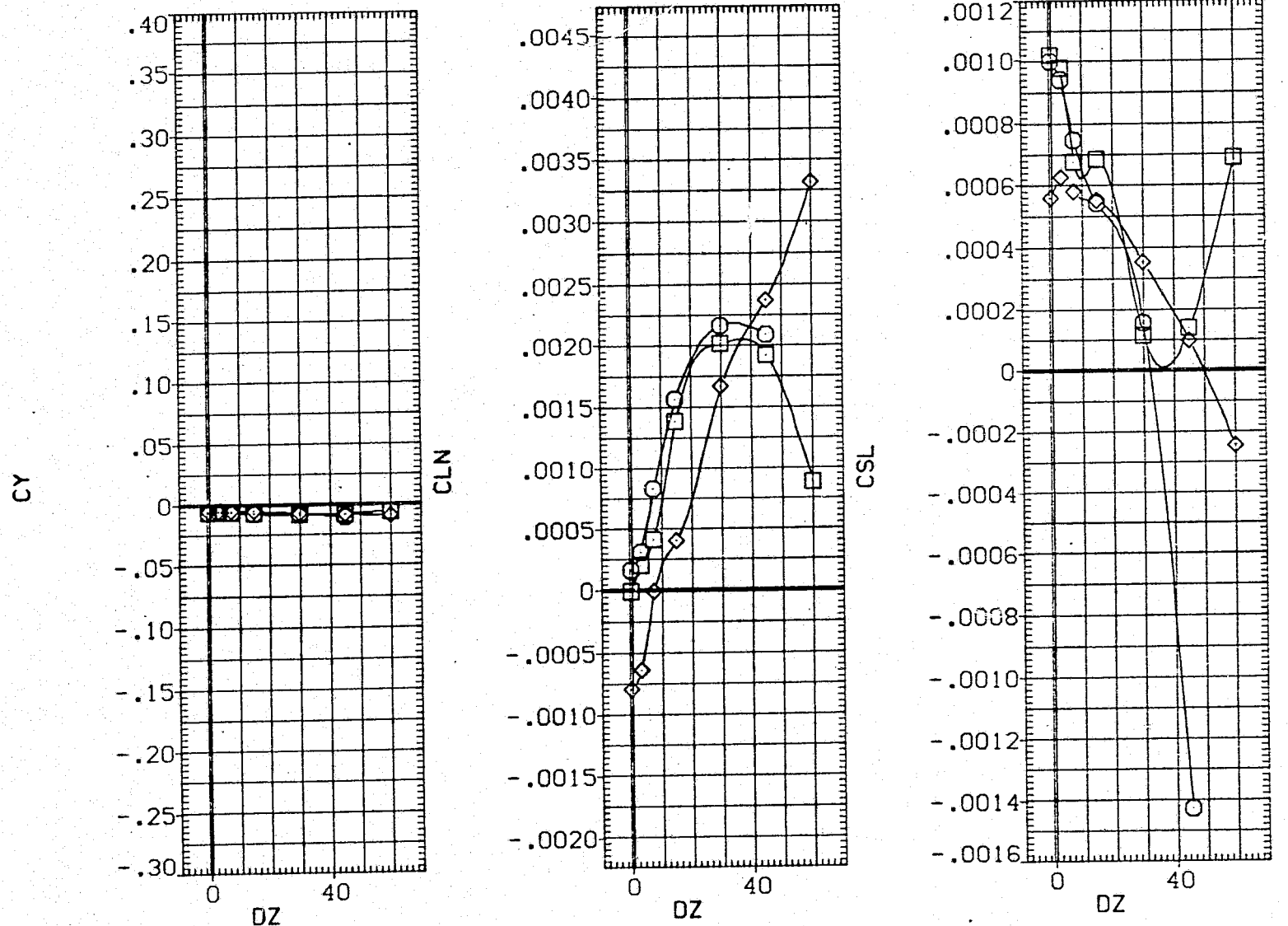


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES		
○	6.000	ALPHAC	.000	BETAC
□	10.000	ELV-1B	.000	ELV-0B
◇	14.000	ELEVON	5.000	MACH
		PHI	.000	DX
		DY	.000	BETA0
				.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

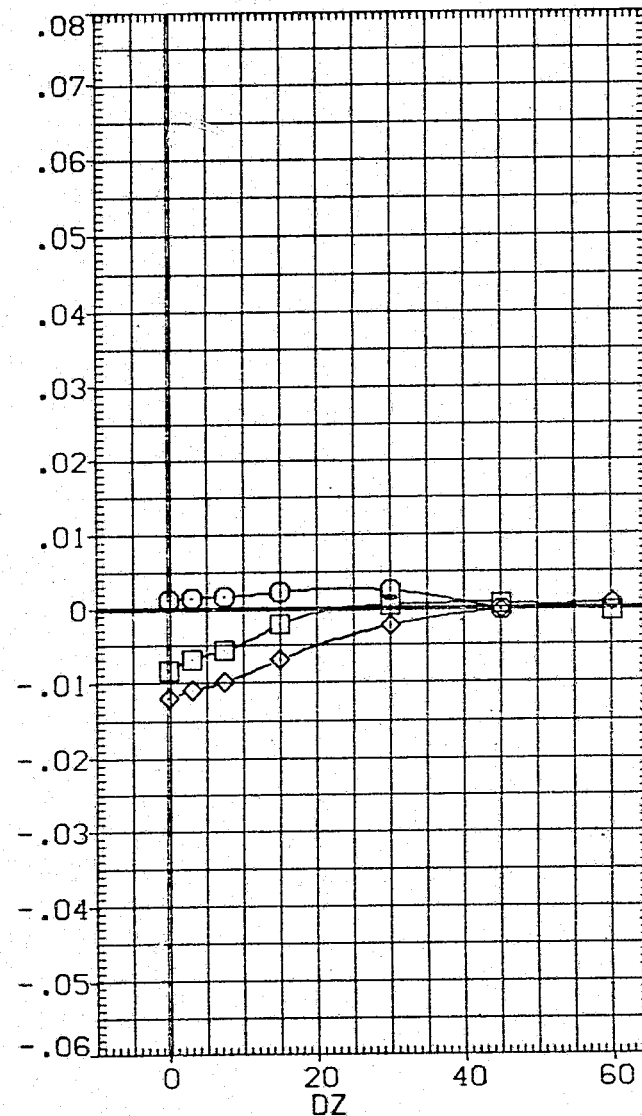
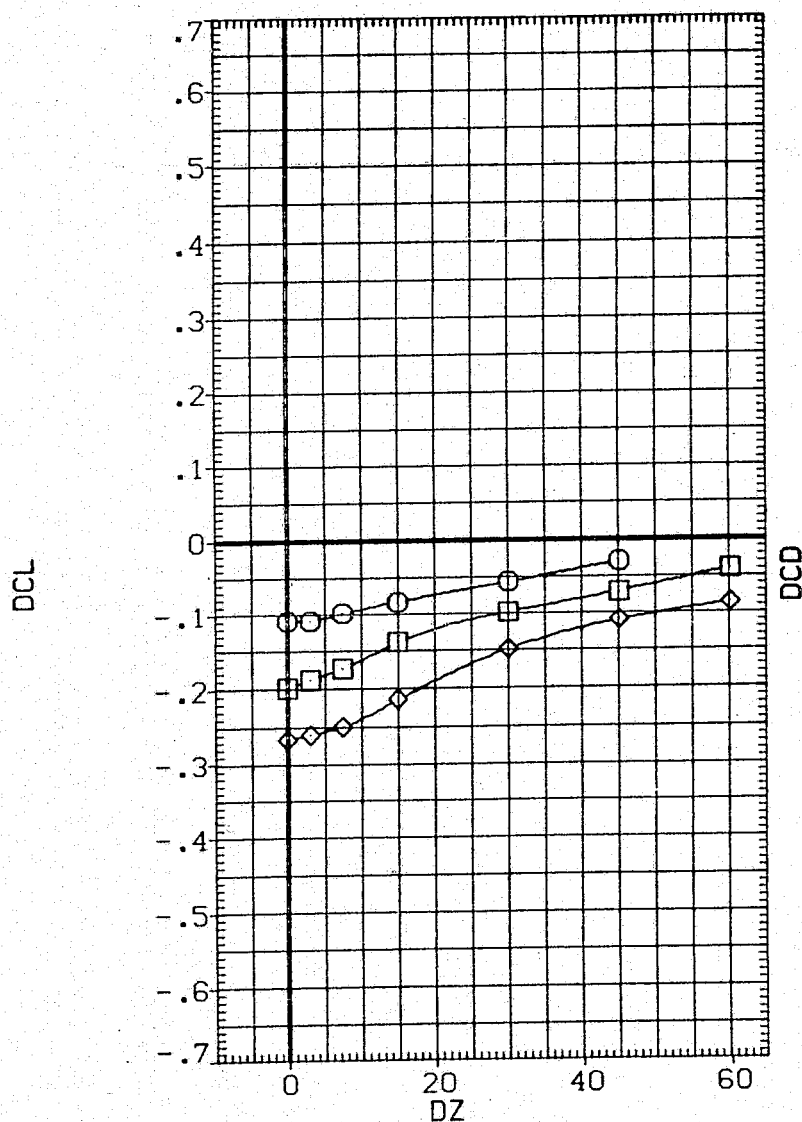


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

ALPHAC

.000

BETAC

.000

10.000

ELV-1B

.000

ELV-0B

3.000

14.000

ELEVON

5.000

MACH

.600

PHI

.000

DX

.000

DY

.000

BETA0

.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

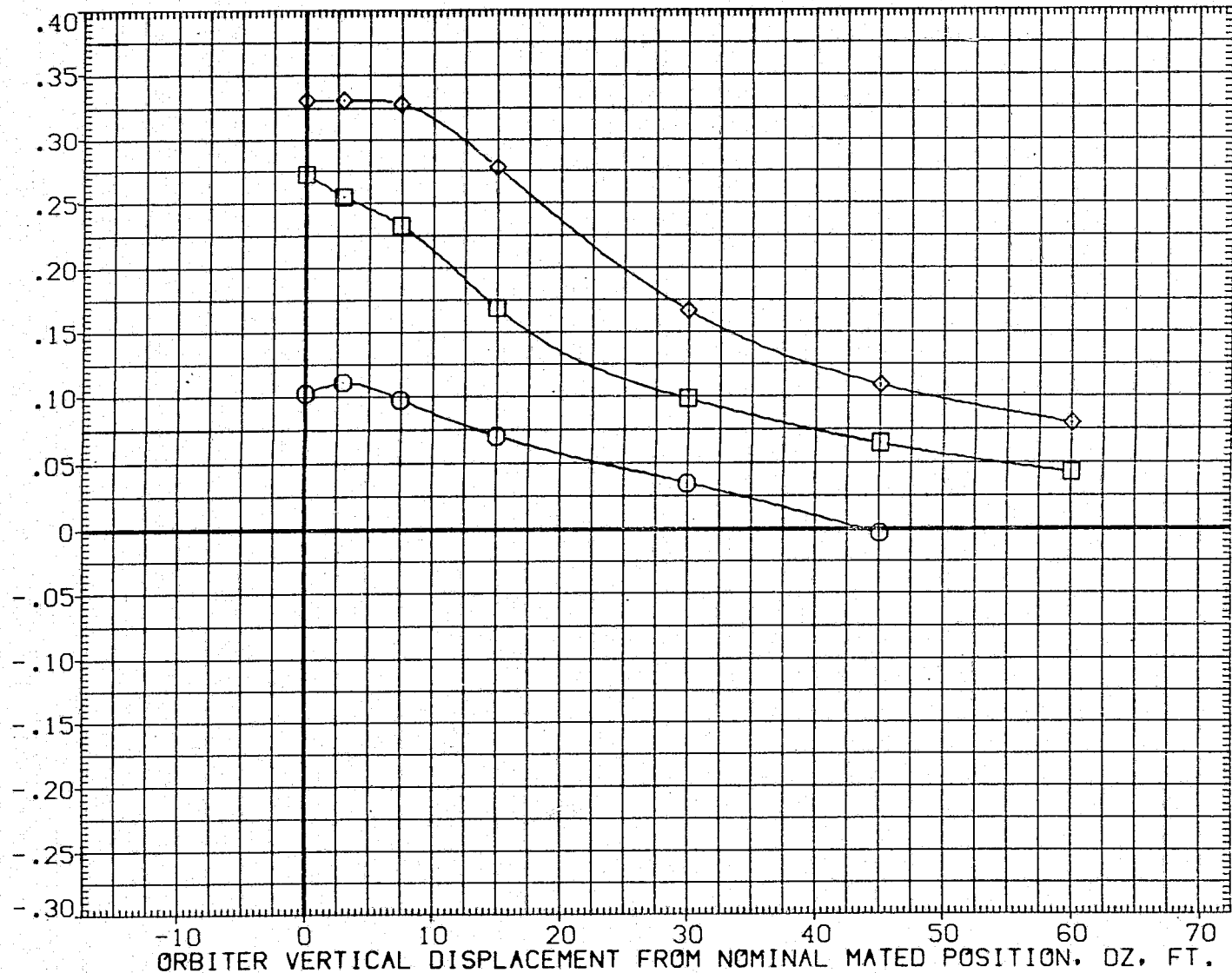


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	6.000	ALPHAC	.000	BETAC	.000
□	10.000	ELV-1B	.000	ELV-0B	3.000
◇	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

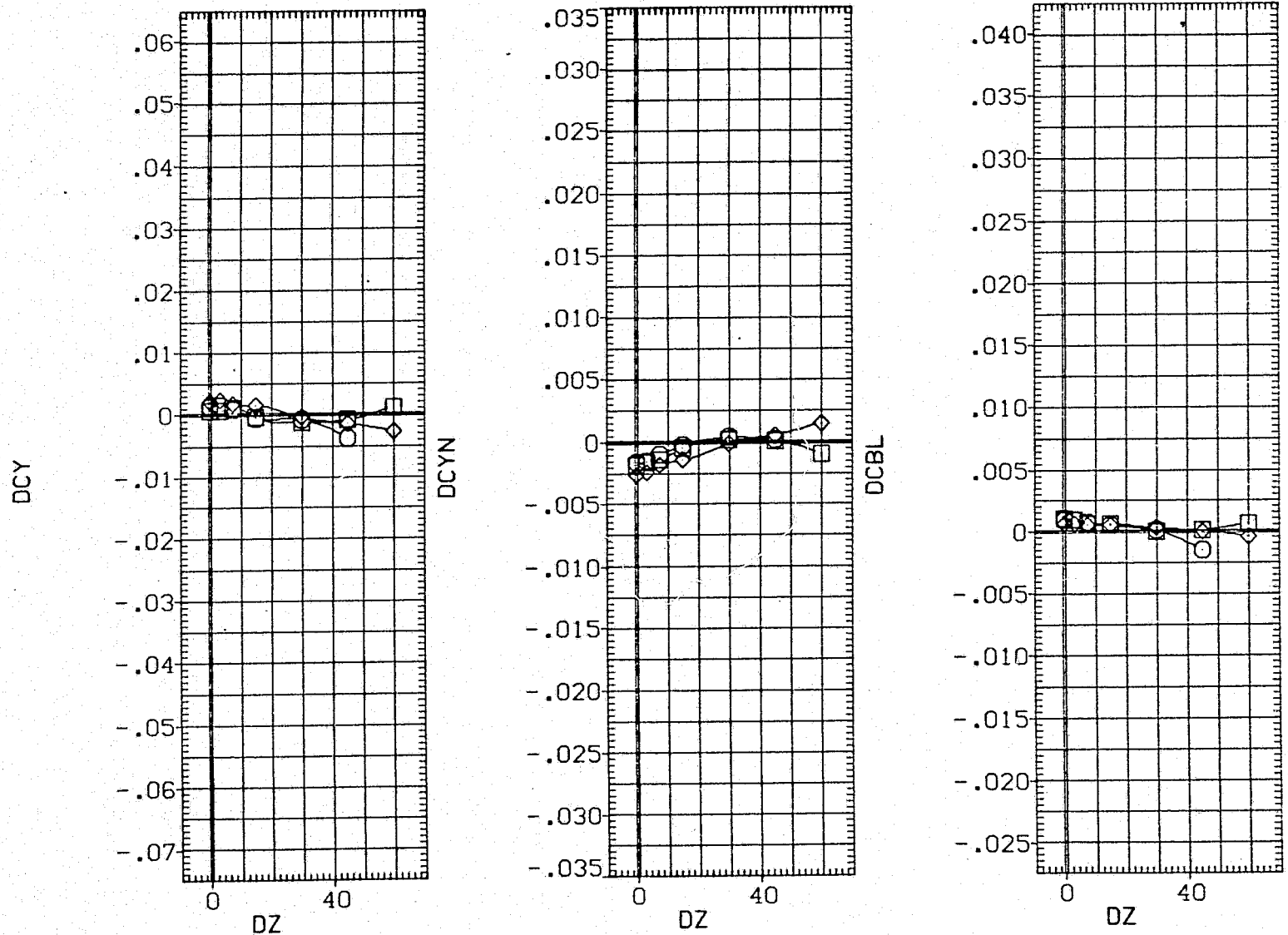


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	6.000	ALPHAC .000 BETAC .000
□	10.000	ELV-1B .000 ELV-0B 3.000
◇	14.000	ELEVON 5.000 MACH .600
		PHI .000 DX .000
		DY .000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

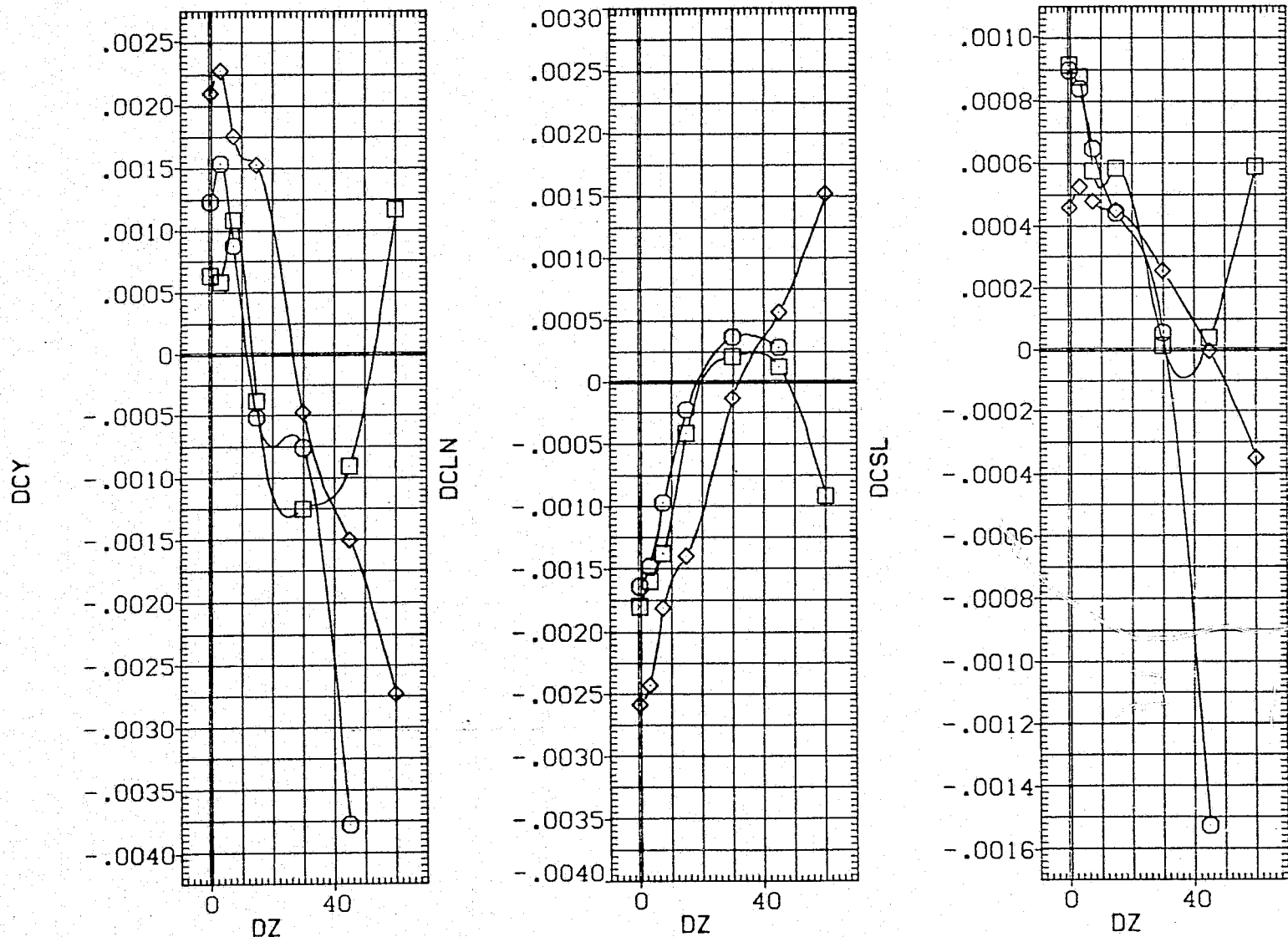


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	6.000	ELEVON	.000	MACH	3.000
□	10.000	BETA0	5.000	BETAC	.600
◇	14.000	PHI	.000	DY	.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

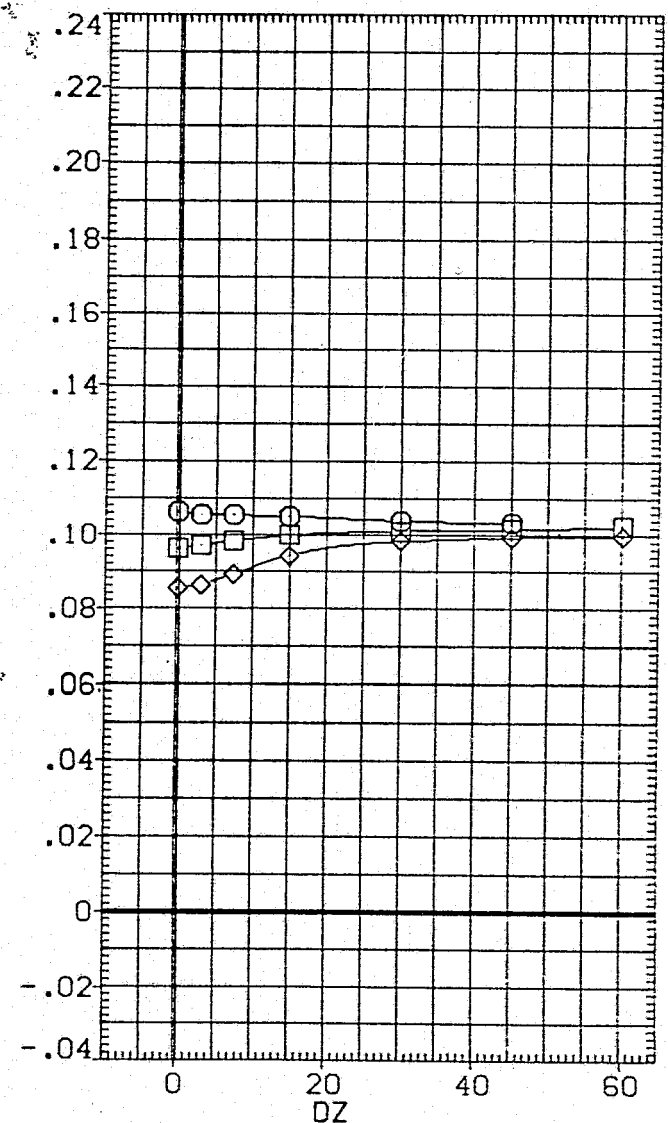
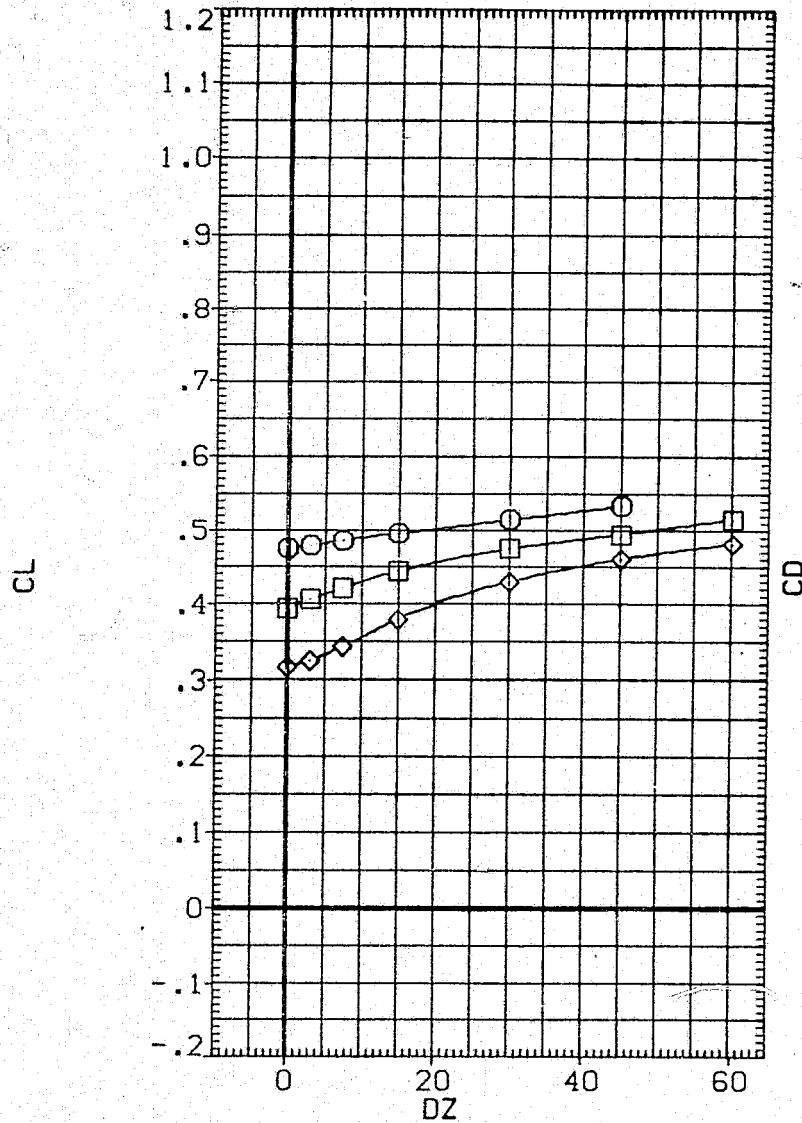


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000 ELV-1B

10.000 ELEV0N

14.000 BETA0

PHI

DX

PARAMETRIC VALUES

.000 ELV-0B

5.000 MACH

.000 BETAC

.000 DY

.000 ALPHAC

3.000

.600

.000

.000

4.000

REFERENCE INFORMATION

SREF 5500.0000

SQ.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

IN.YC

ZMRP 190.8000

IN.ZC

SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

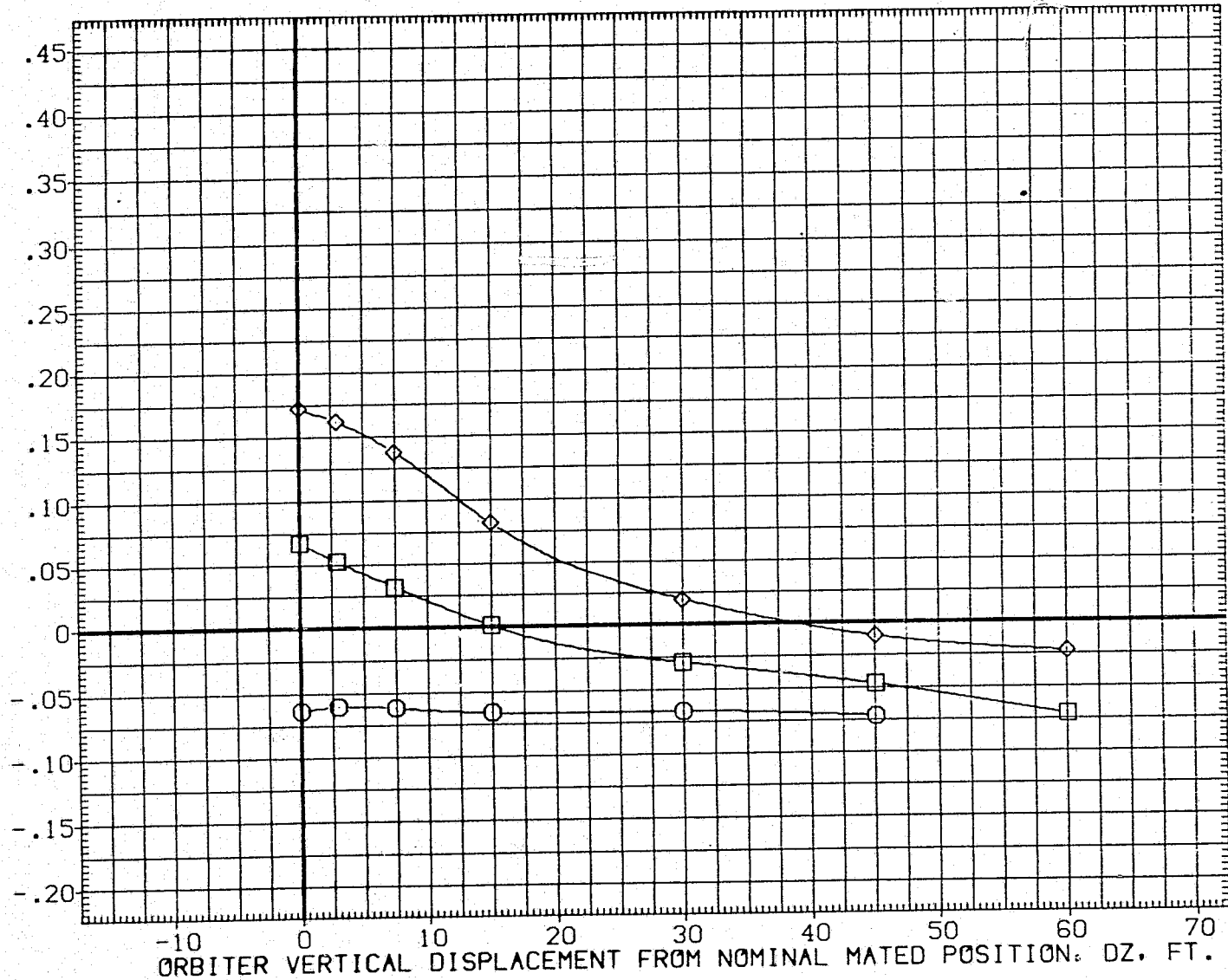


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	6.000	.000	ELV-0B	3.000
□	10.000	5.000	MACH	.600
◇	14.000	.000	BETAC	.000
		.000	DI	.000
		.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

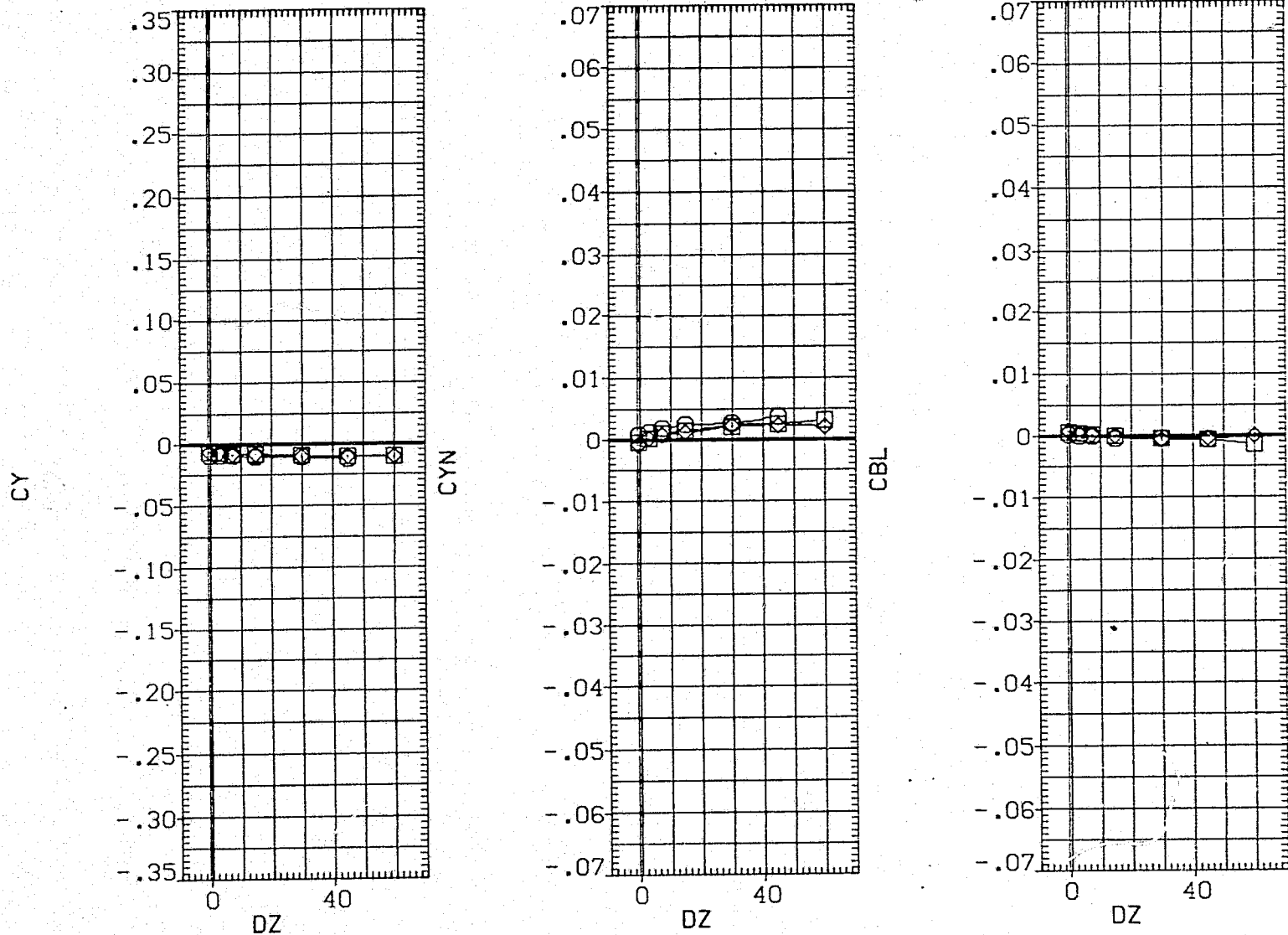


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	6.000	ELEVON	.000	MACH	3.000
□	10.000	BETA0	5.000	BETAC	.600
◇	14.000	PHI	.000	DY	.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

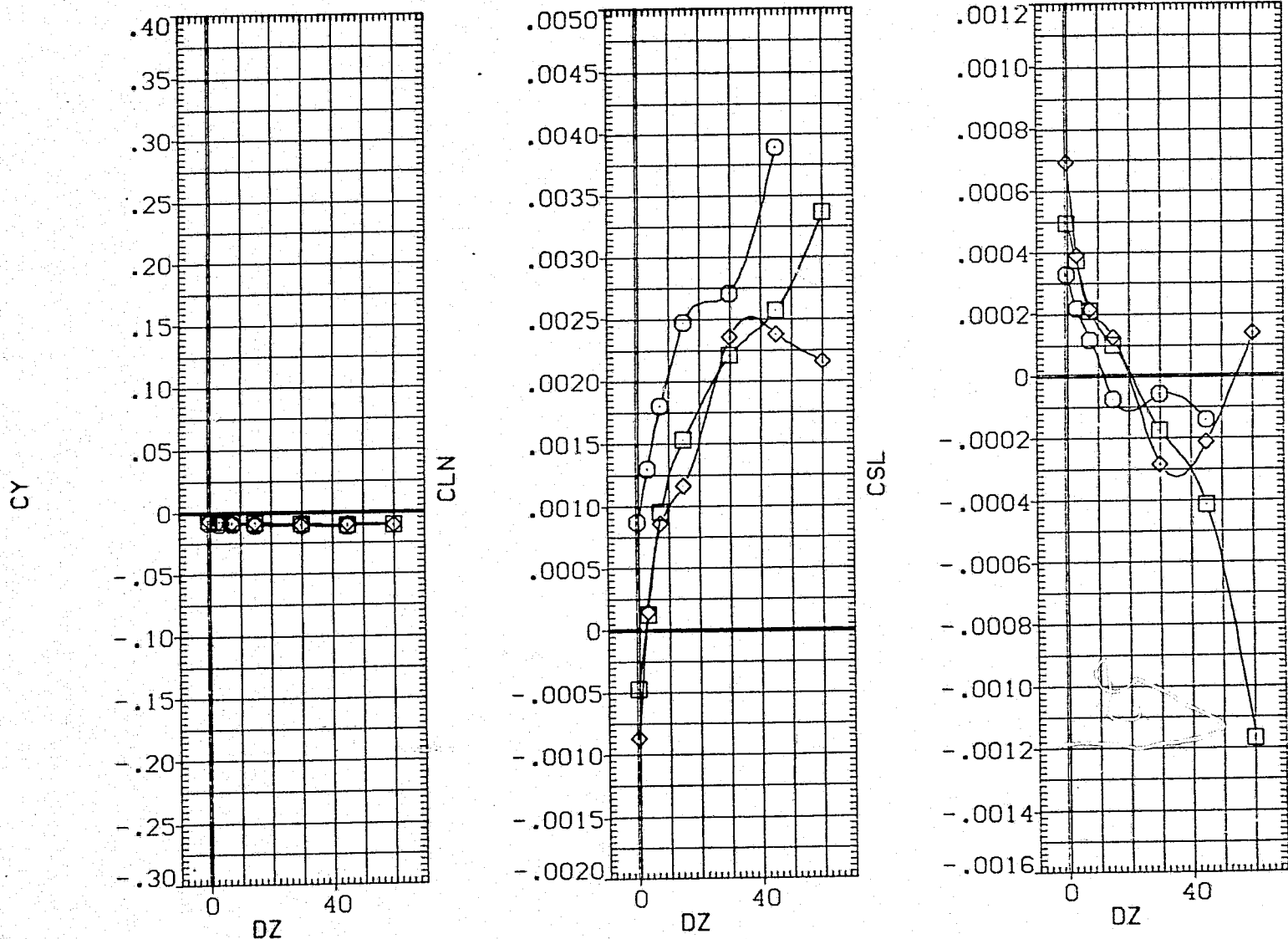


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	6.000	ALPHAC	4.000	BETAC	.000
□	10.000	ELV-1B	.000	ELV-0B	3.000
◇	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

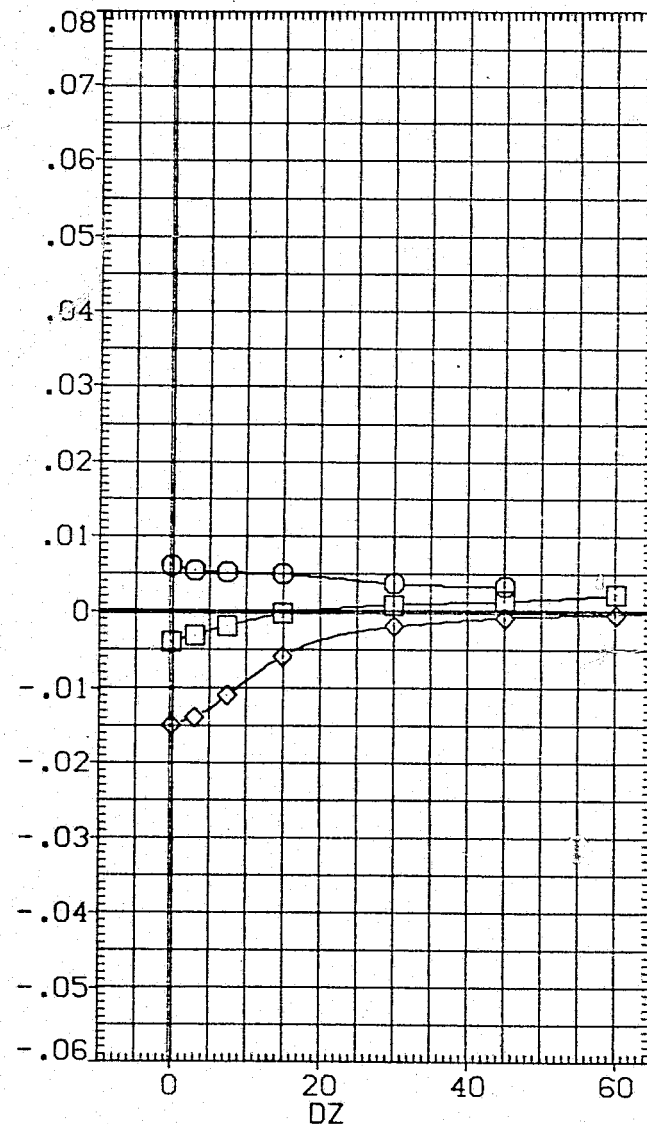
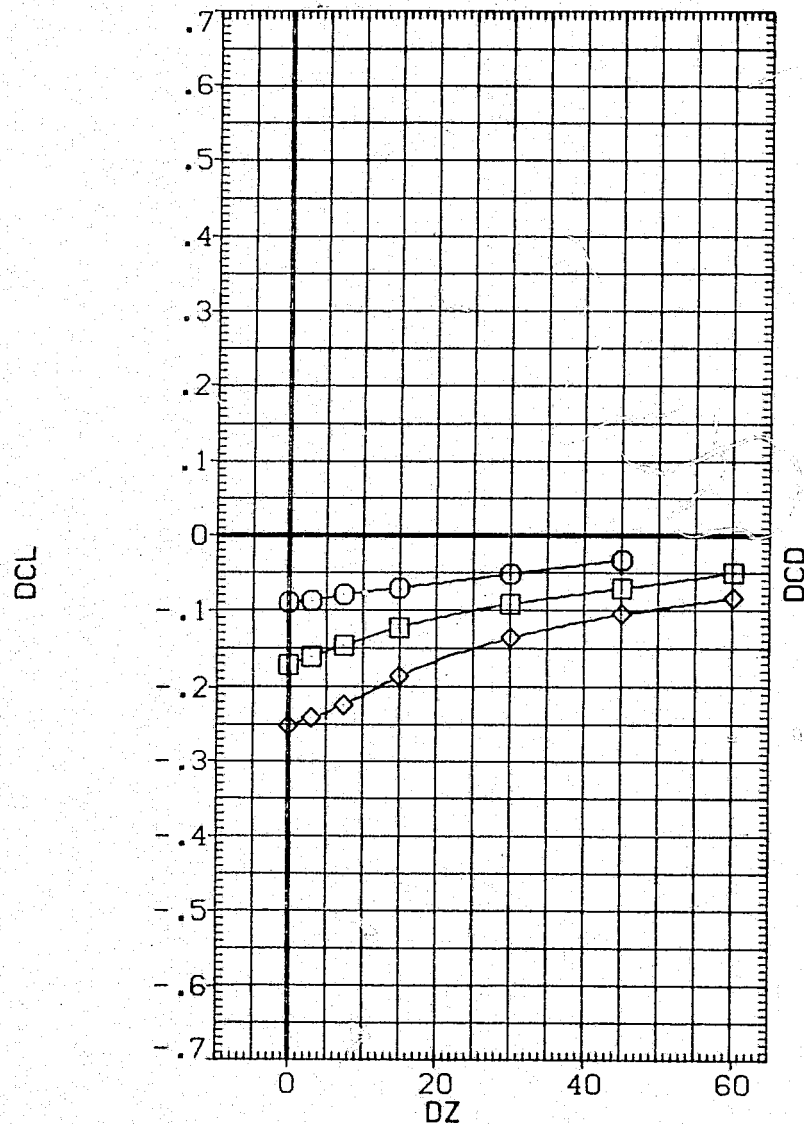


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000 BETAC

.000 ELV-08

5.000 MACH

.000 DX

.000 BETA0

.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

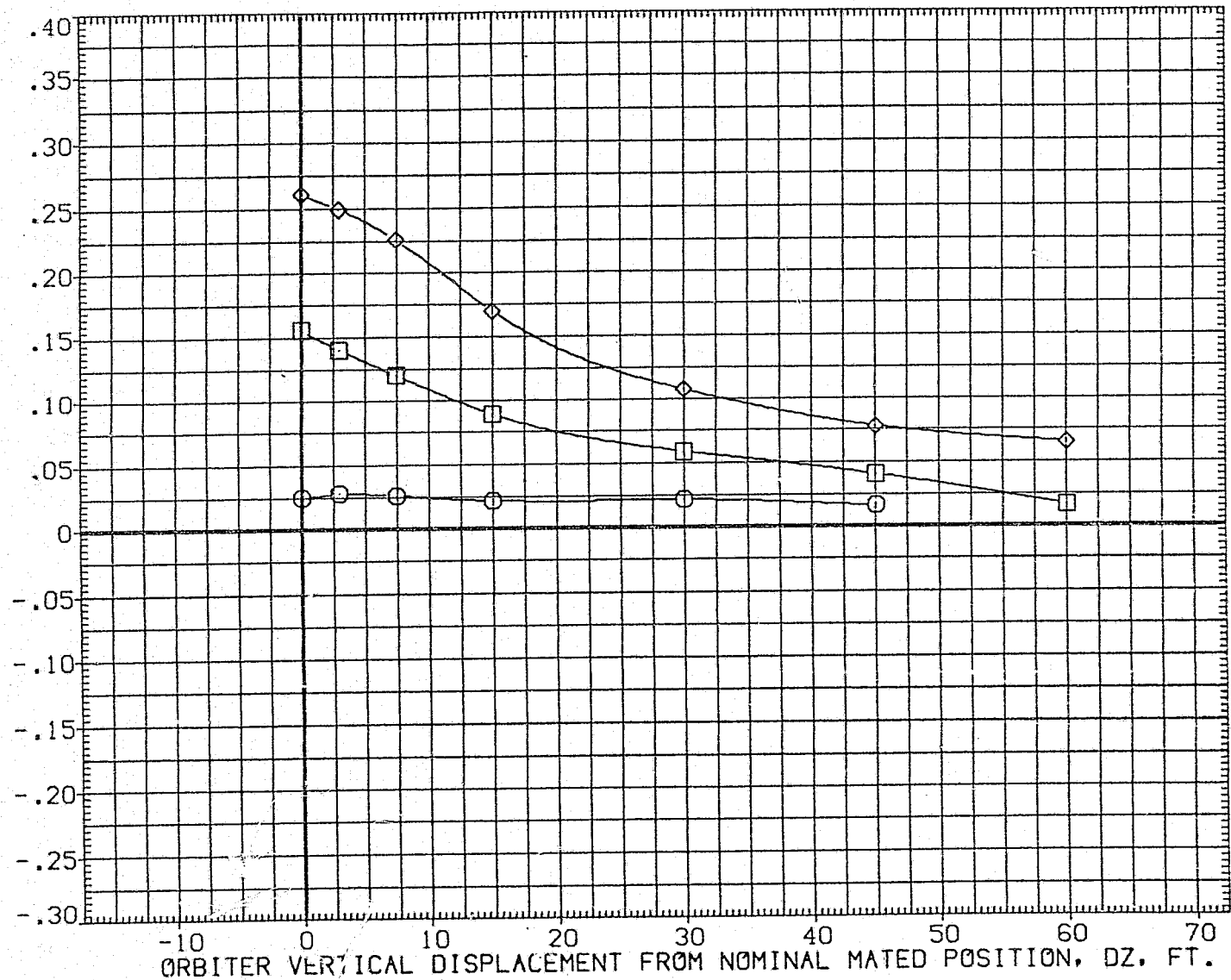


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC	
○	6.000	ELV-1B	.000	ELV-0B	3.000
□	10.000	ELEVON	5.000	MACH	.600
◇	14.000	PHI	.000	DX	.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
9REF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.C300	

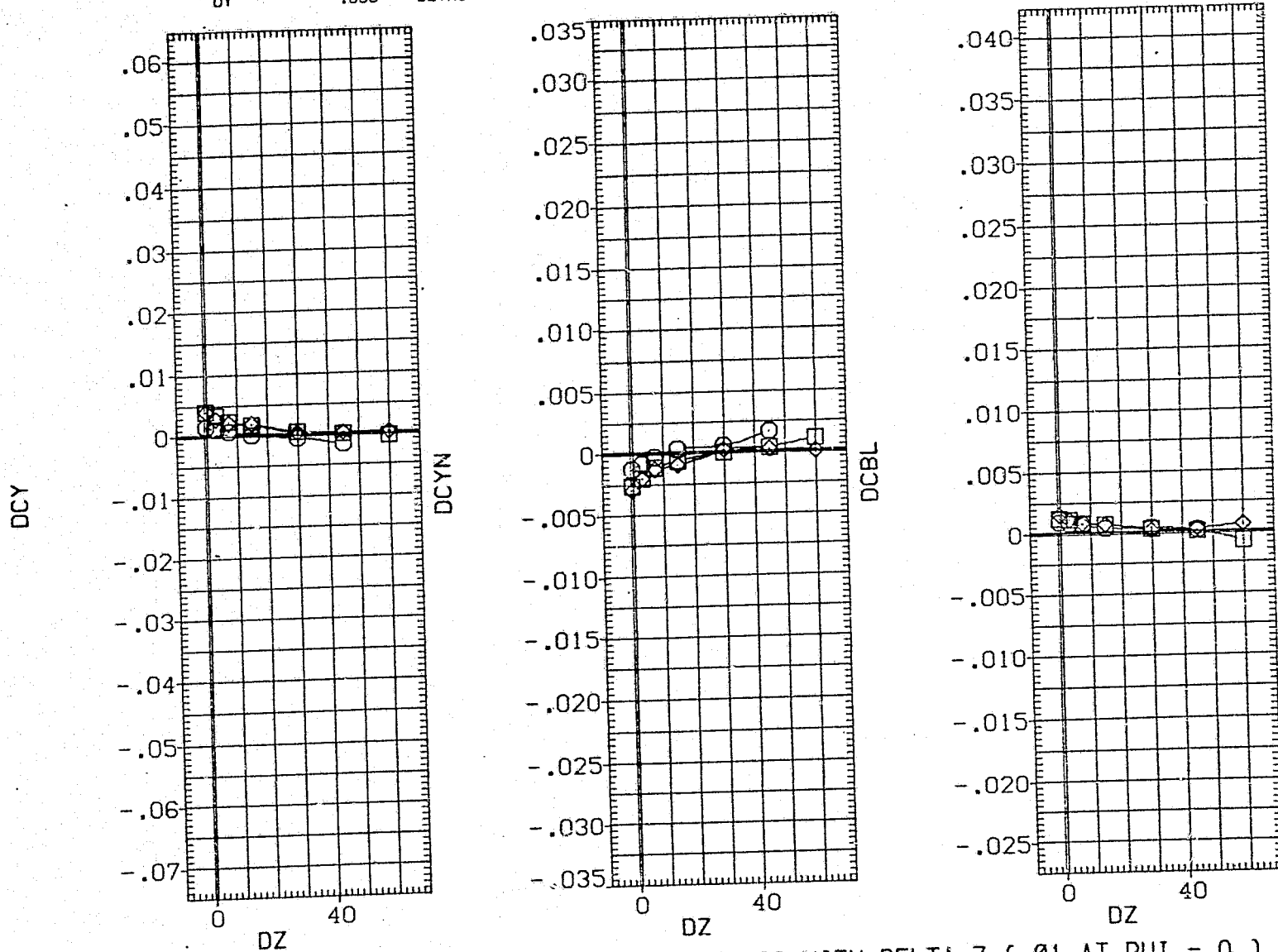


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA		PARAMETRIC VALUES		
	6.000	ALPHAC	4.000	BETAC	.000
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
◇		PHI	.000	OX	.000
		OY	.000	BETAG	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

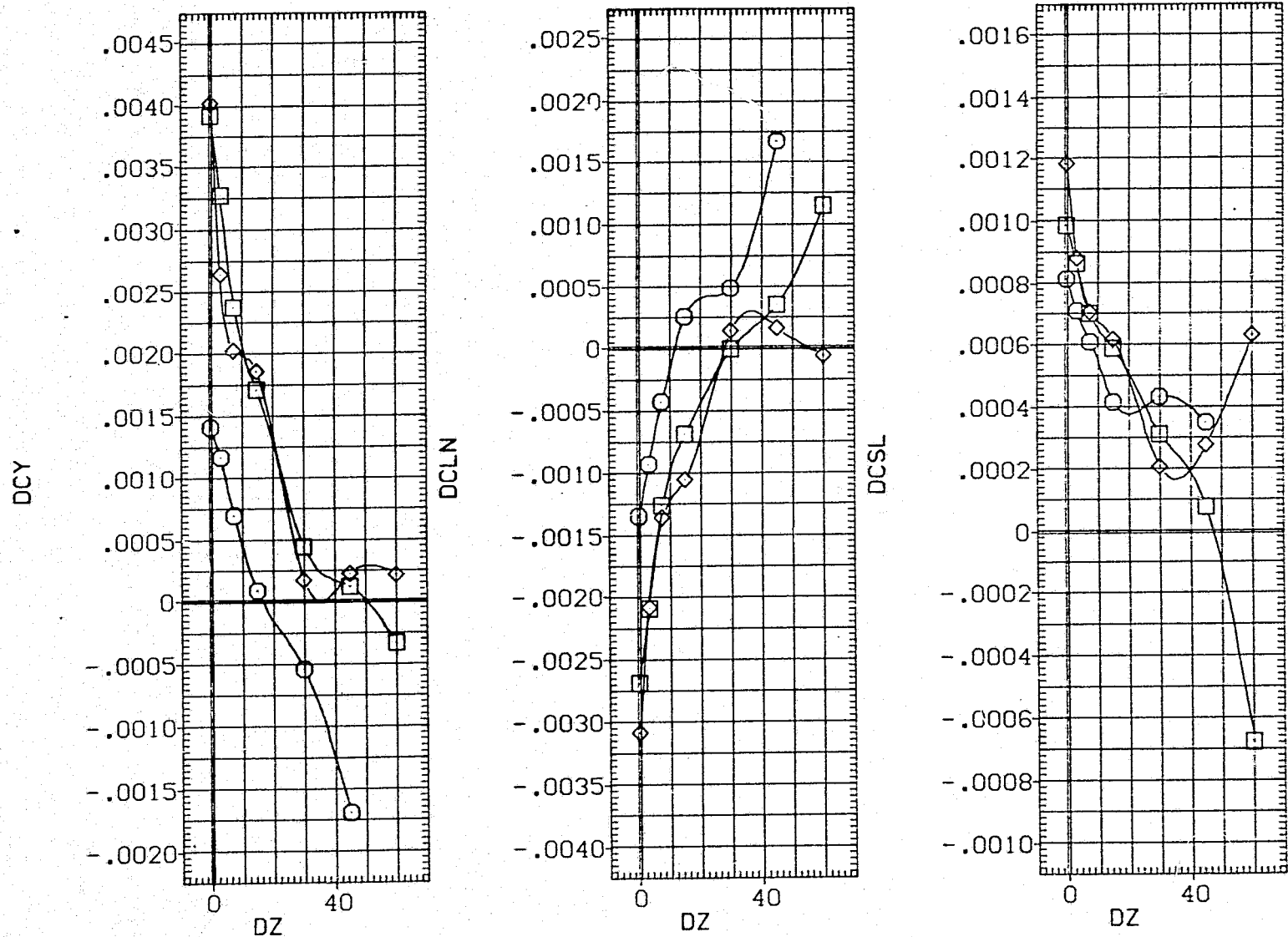


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	3.000
○	6.000	ELEVON	.000	MACH	.600
□	10.000	BETA0	5.000	BETAC	.000
◇	14.000	PHI	.000	DY	.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

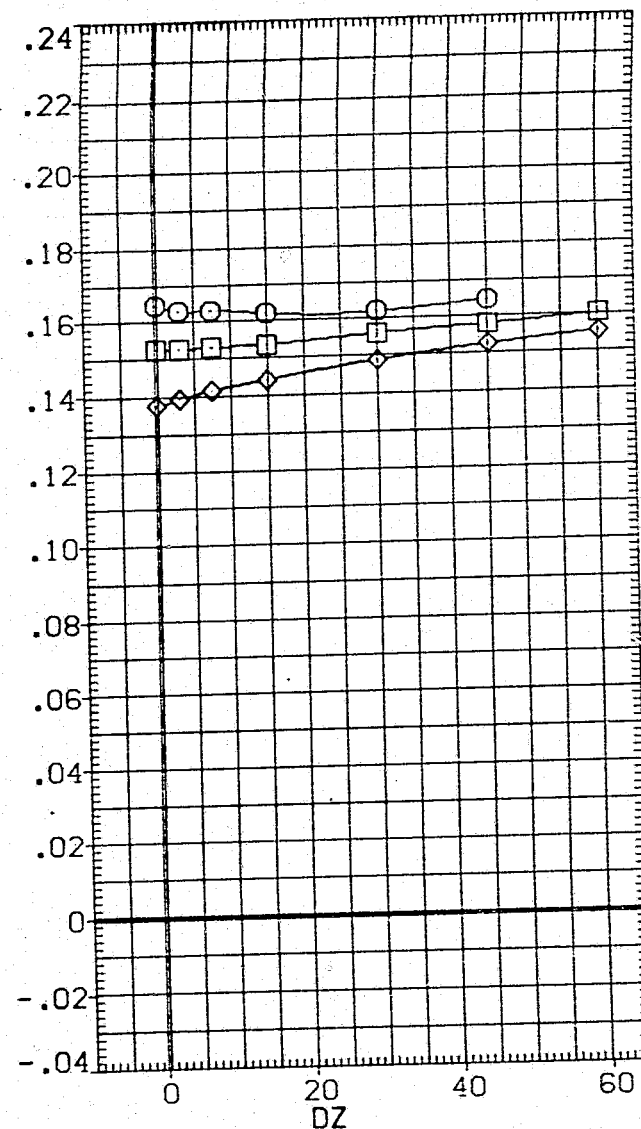
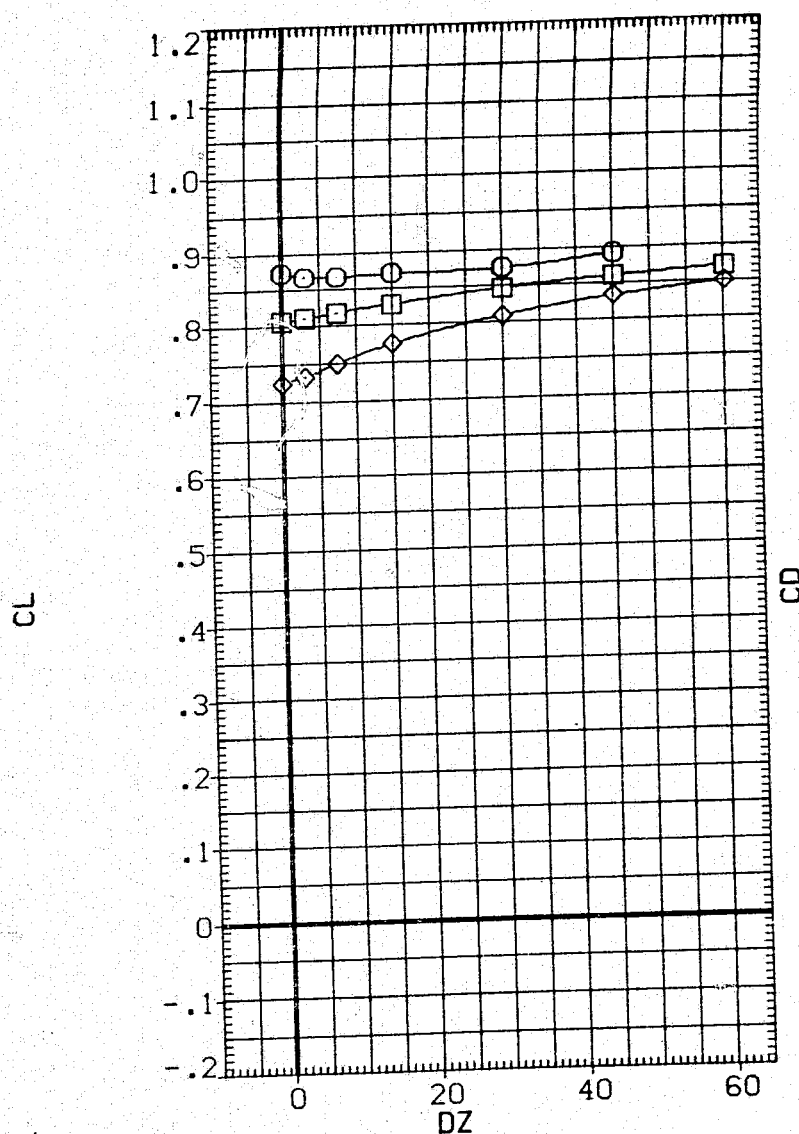


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	6.000	ELV-IB .000 ELV-OB 3.000
□	10.000	ELEVON 5.000 MACH .600
◇	14.000	BETA0 .000 BETAC .000
		PHI .000 DY .000
		DX .000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

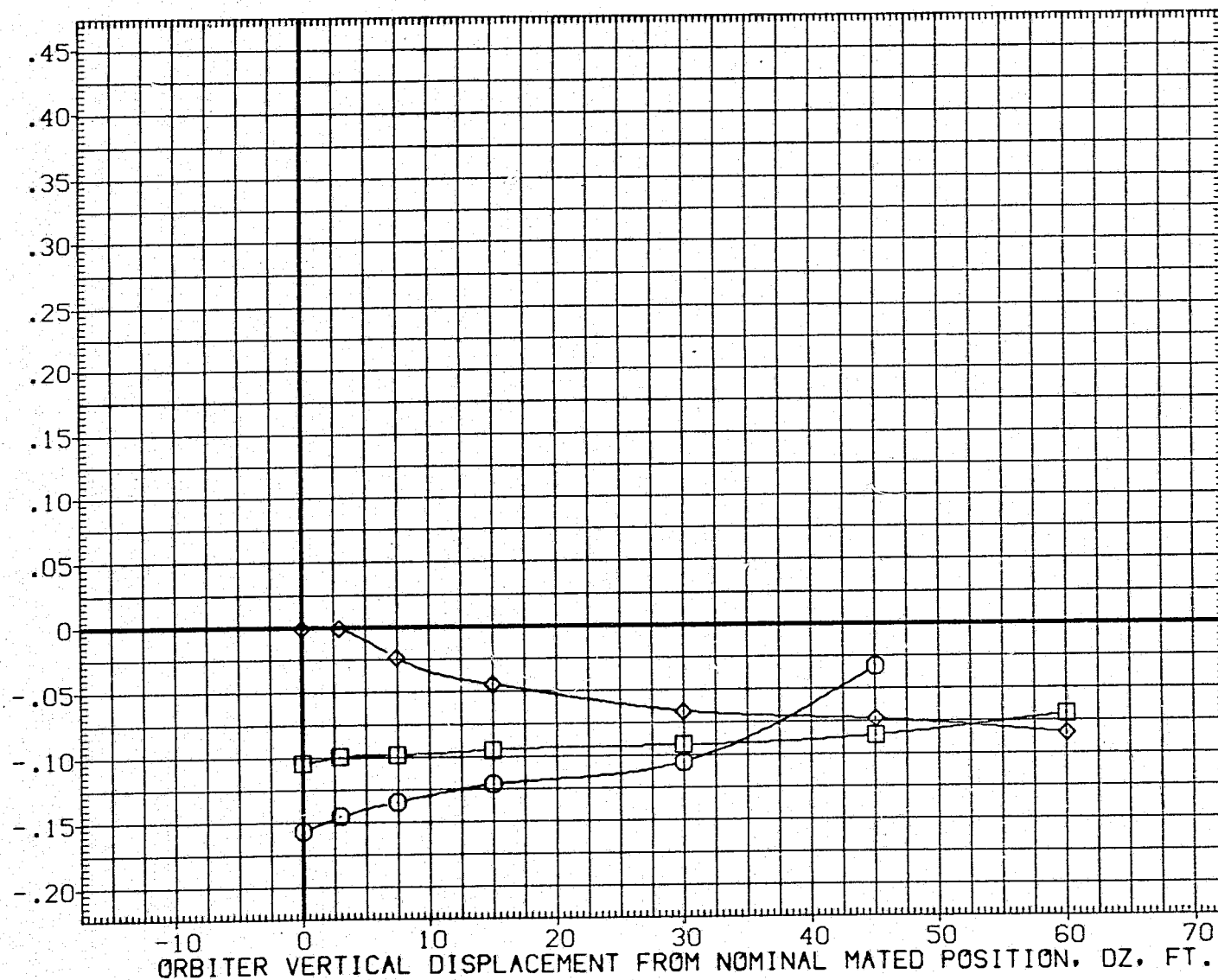


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	6.000	ELV-1B	.000	ELV-0B	3.000
□	10.000	ELEVON	5.000	MACH	.600
◇	14.000	BETA0	.000	BETAC	.000
		PHI	.000	DY	.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

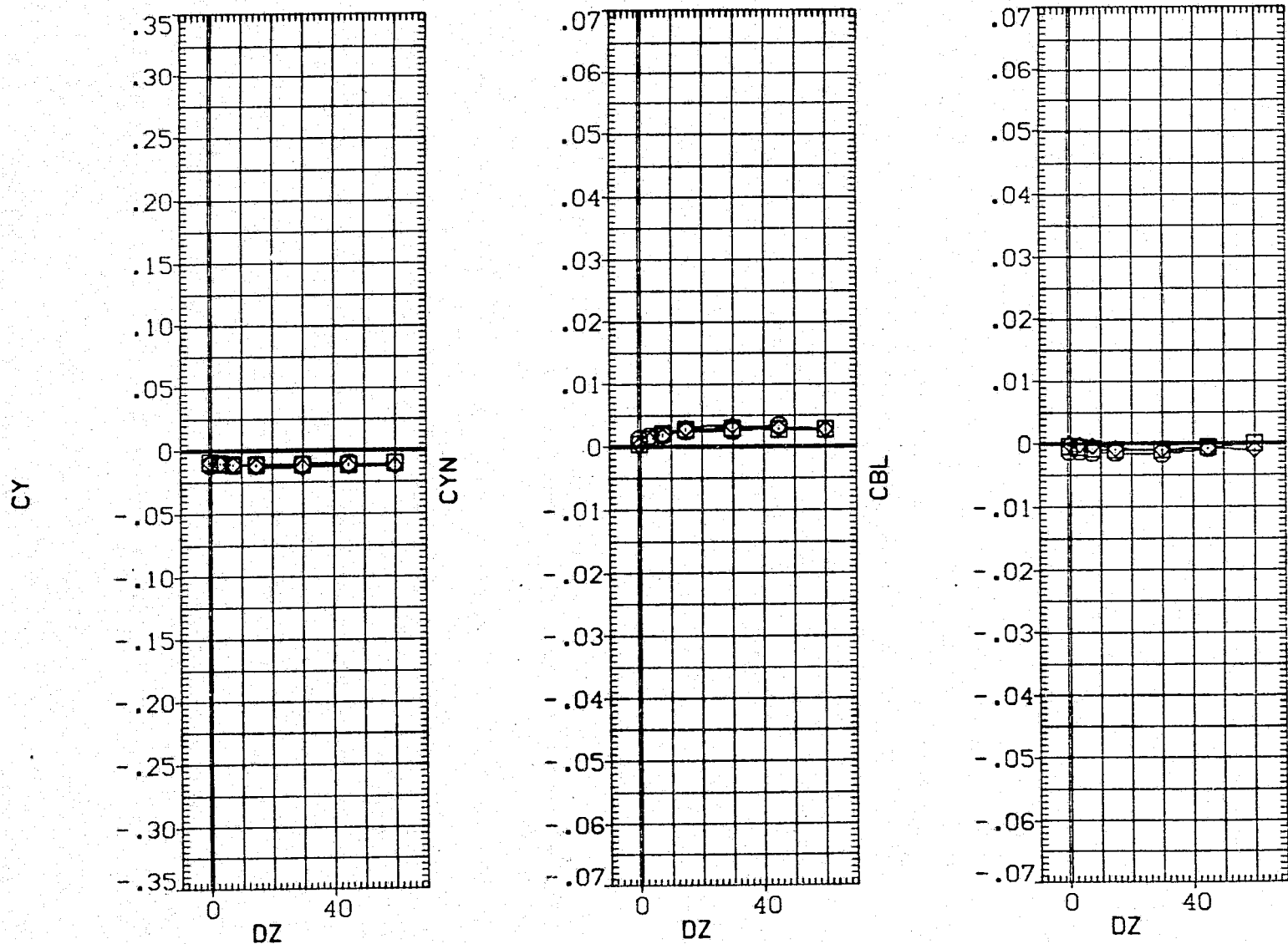


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	6.000	ELEVON	.000	MACH	3.000
□	10.000	BETA0	5.000	BETAC	.600
◇	14.000	PHI	.000	DY	.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

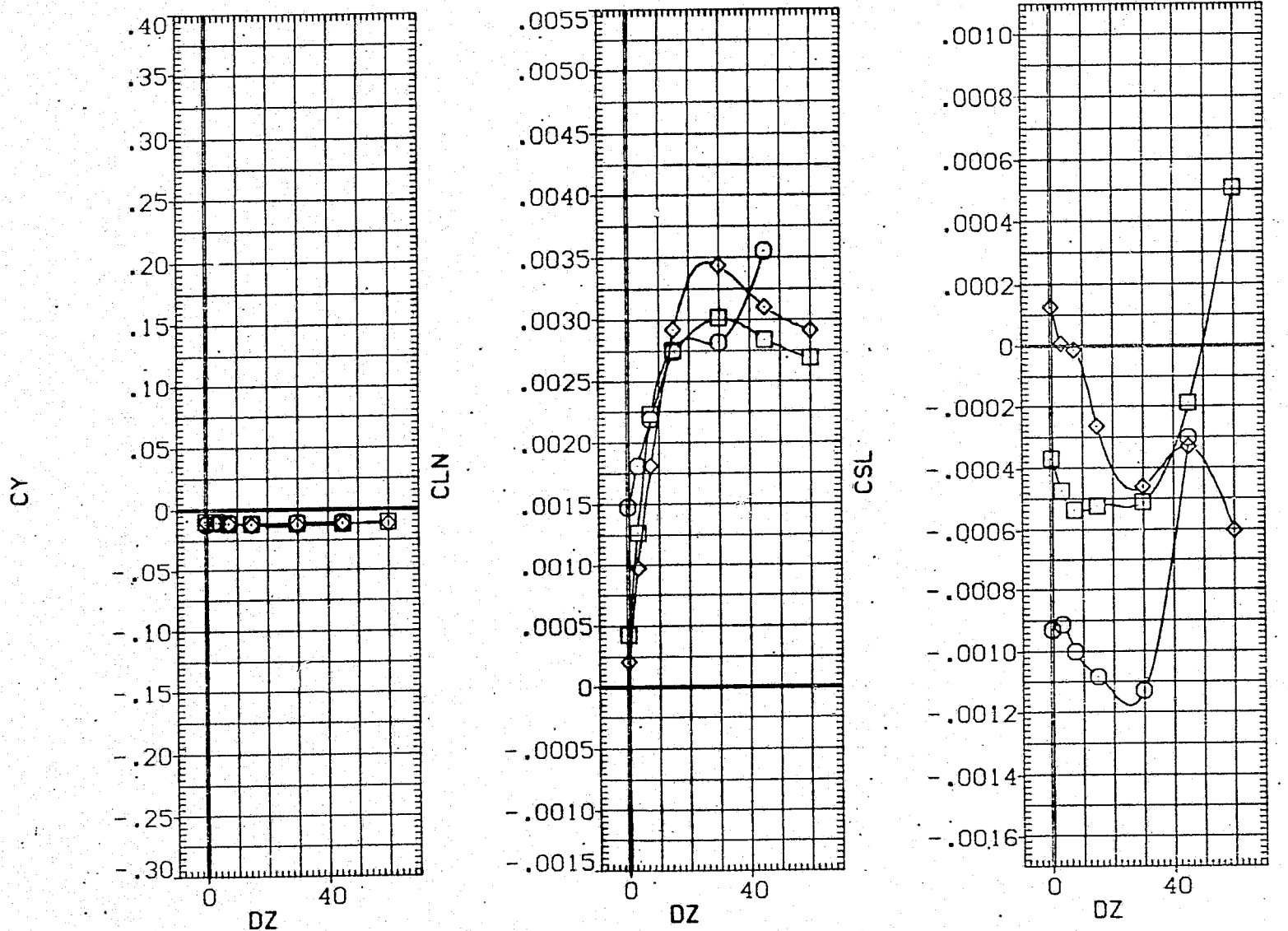


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (.01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	6.000	ALPHAC 8.000 BETAC .000
□	10.000	ELV-1B .000 ELV-0B 3.000
◇	14.000	ELEVON 5.000 MACH .600
		PHI .000 DX .000
		DY .000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.3400	IN.
XMRP	1339.9000	IN.AC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

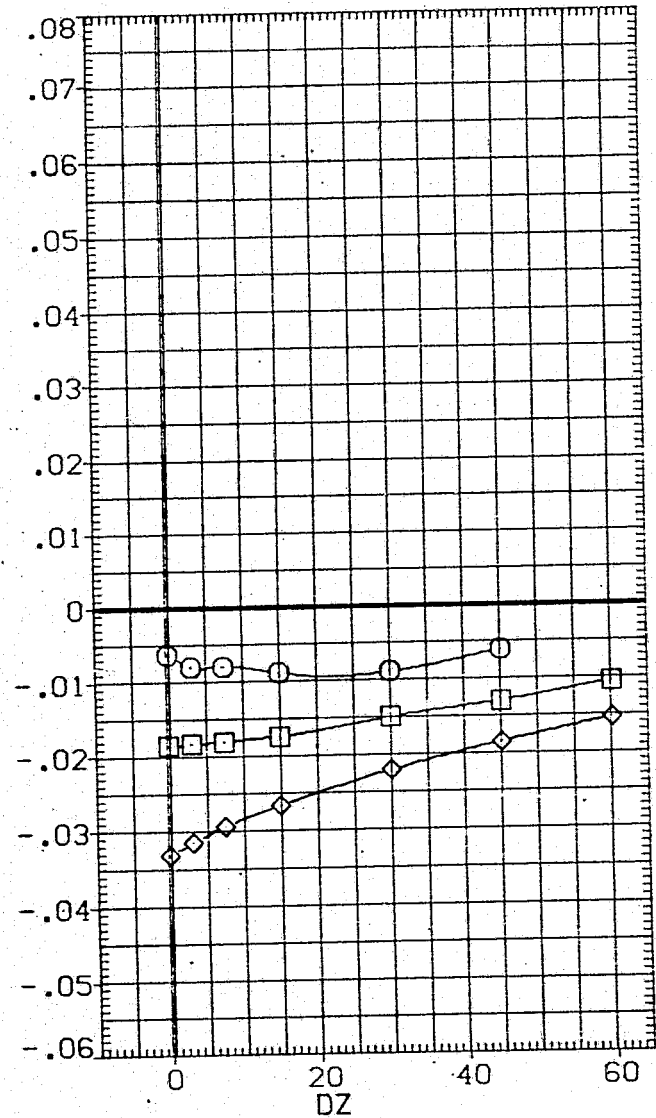
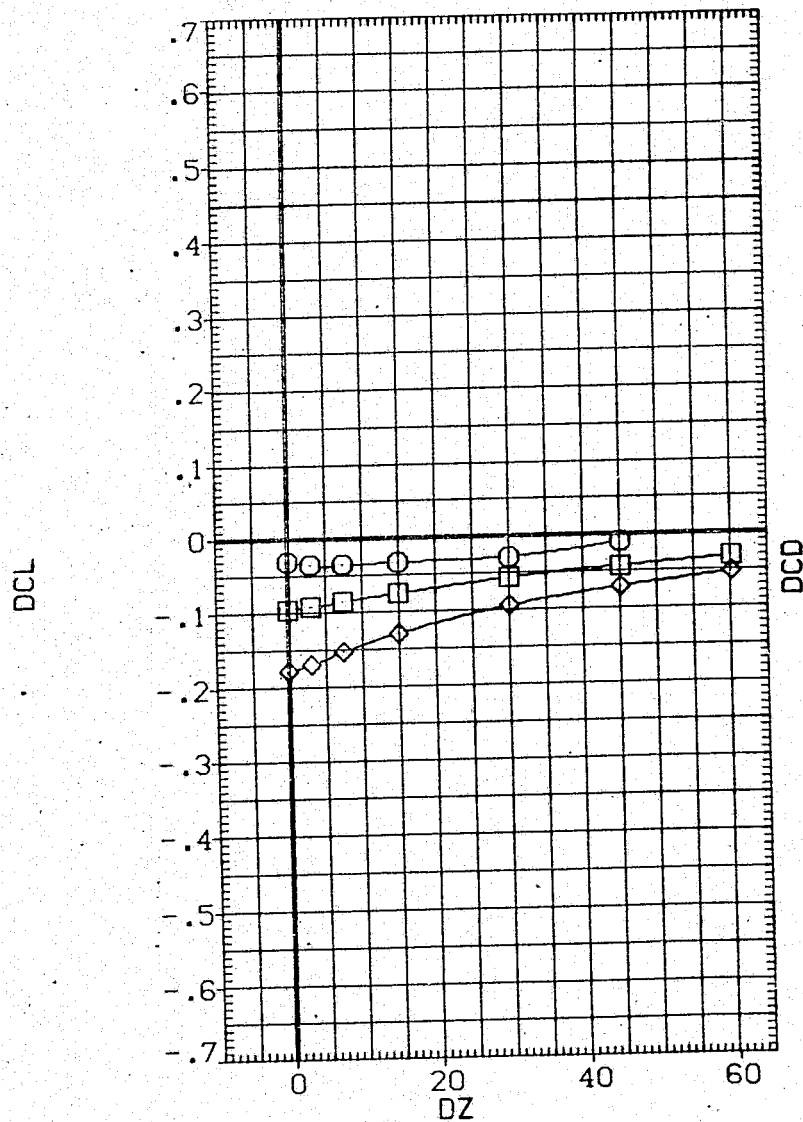


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

OY

PARAMETRIC VALUES

8.000

.000

5.000

.000

.000

BETAC

ELV-OB

MACH

DX

BETA0

.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

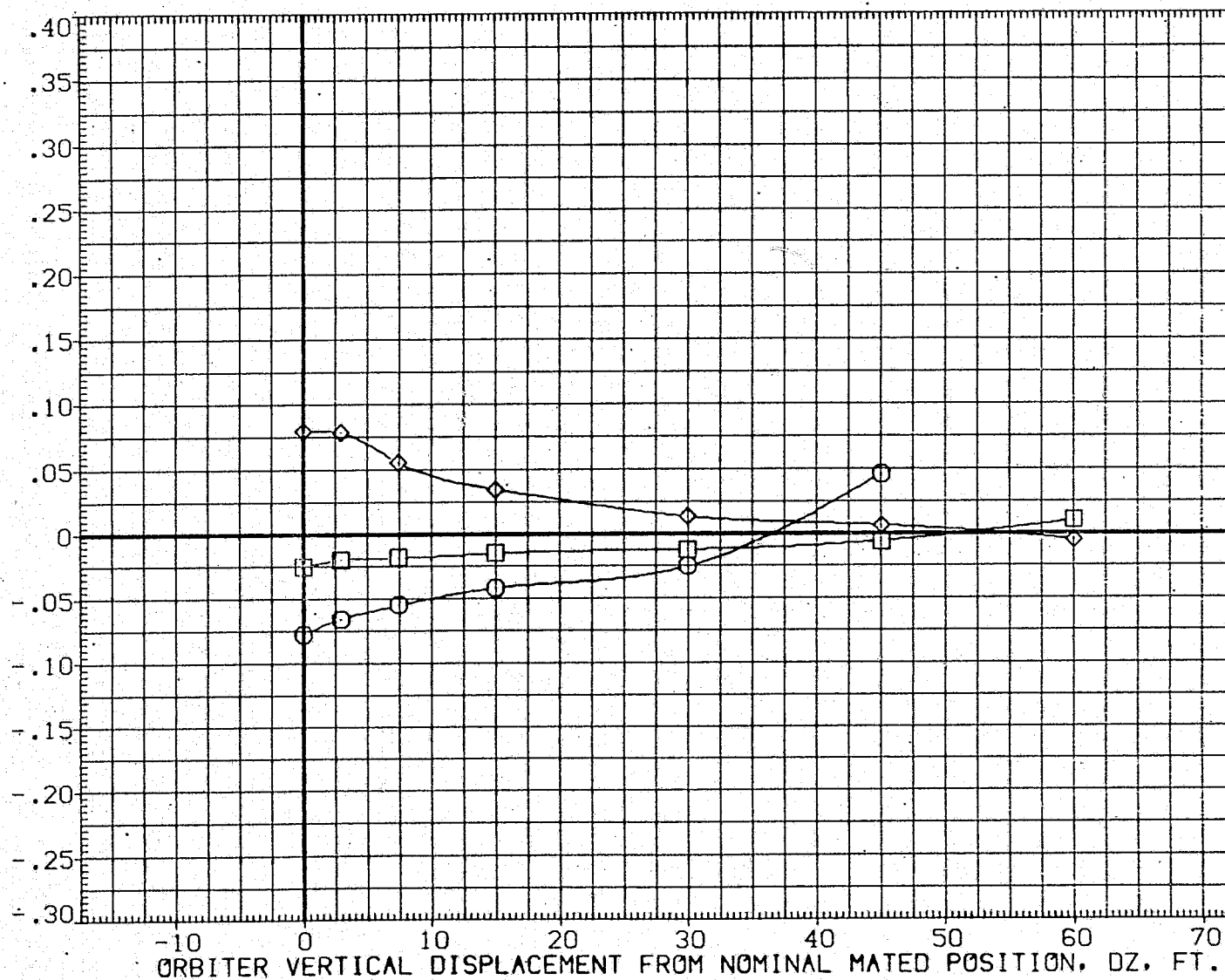


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	6.000	ALPHAC	8.000	BETAC	.000
□	10.000	ELV-1B	.000	ELV-0B	3.000
◇	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.7800	IN.
BREF	2348.2400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

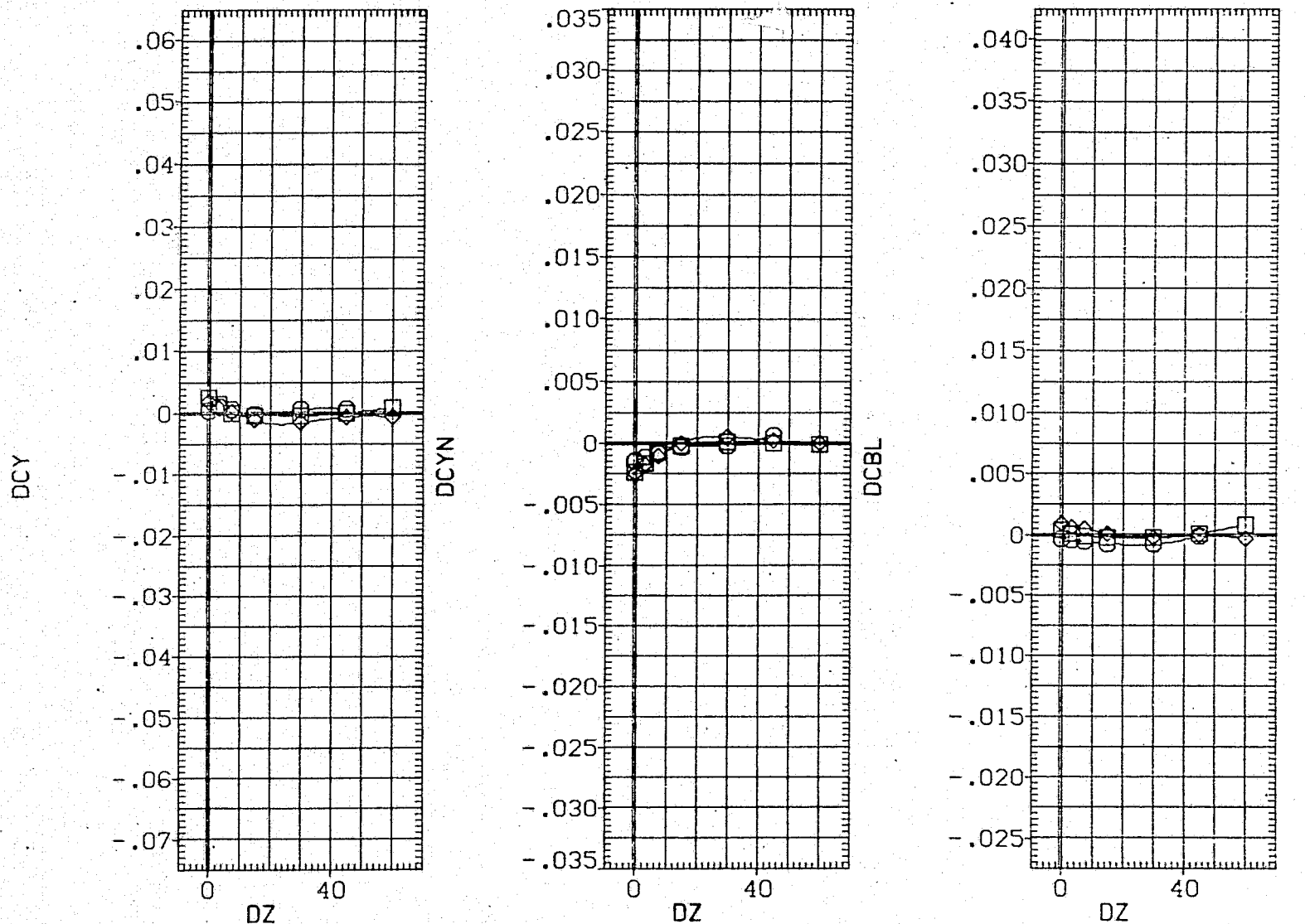


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	6.000	8.000	BETAC	.000
□	10.000	.000	ELV-0B	3.000
◇	14.000	5.000	MACH	.600
		PHI	DX	.000
		DY	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMHP	1339.9000	IN.XC
YMHP	.0000	IN.YC
ZMHP	190.8000	IN.ZC
SCALE	.0300	

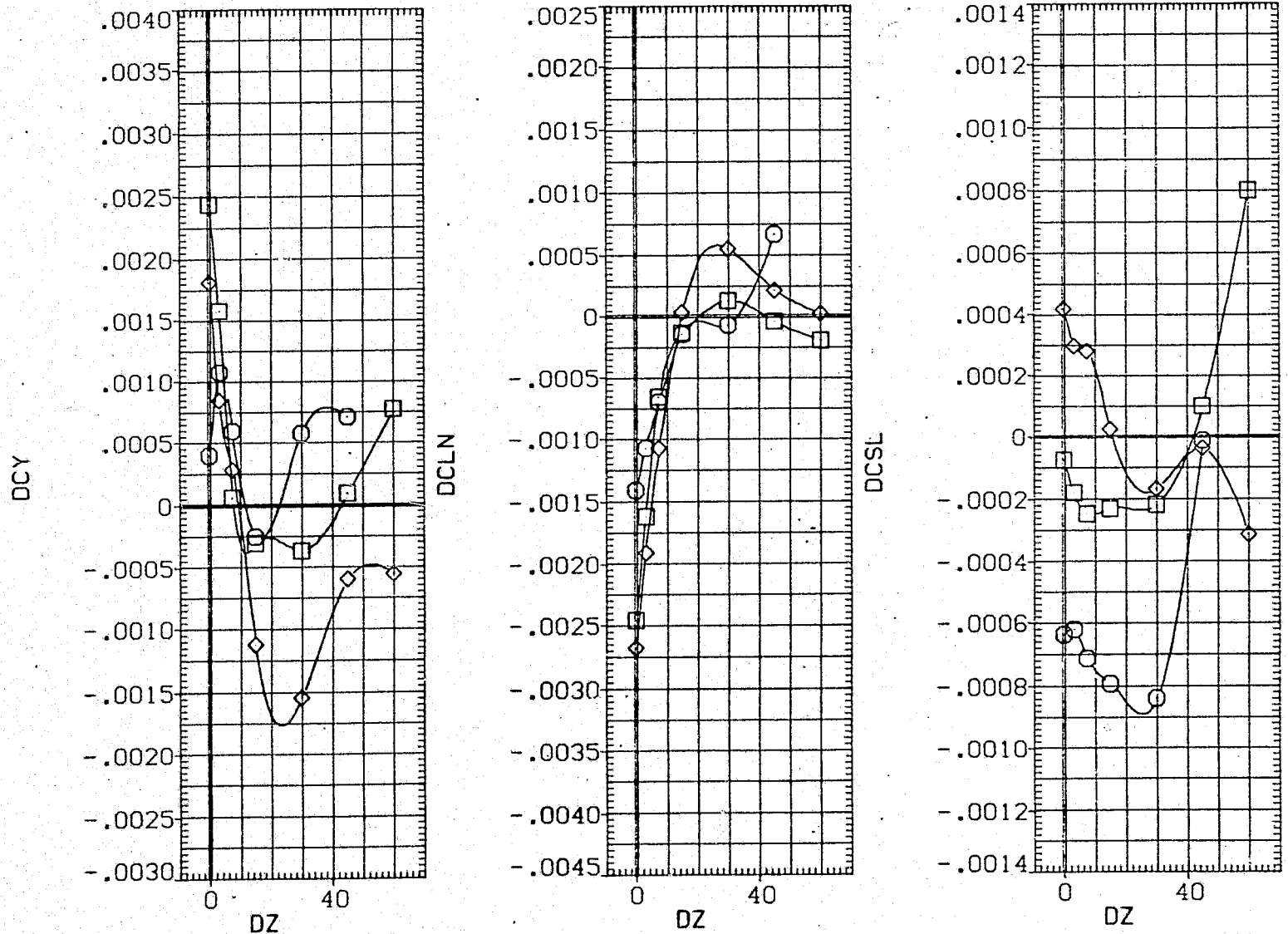


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	6.000	ALPHAC	.000	BETAC	.000
□	10.000	ELV-IB	.000	ELV-OB	3.000
◇	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

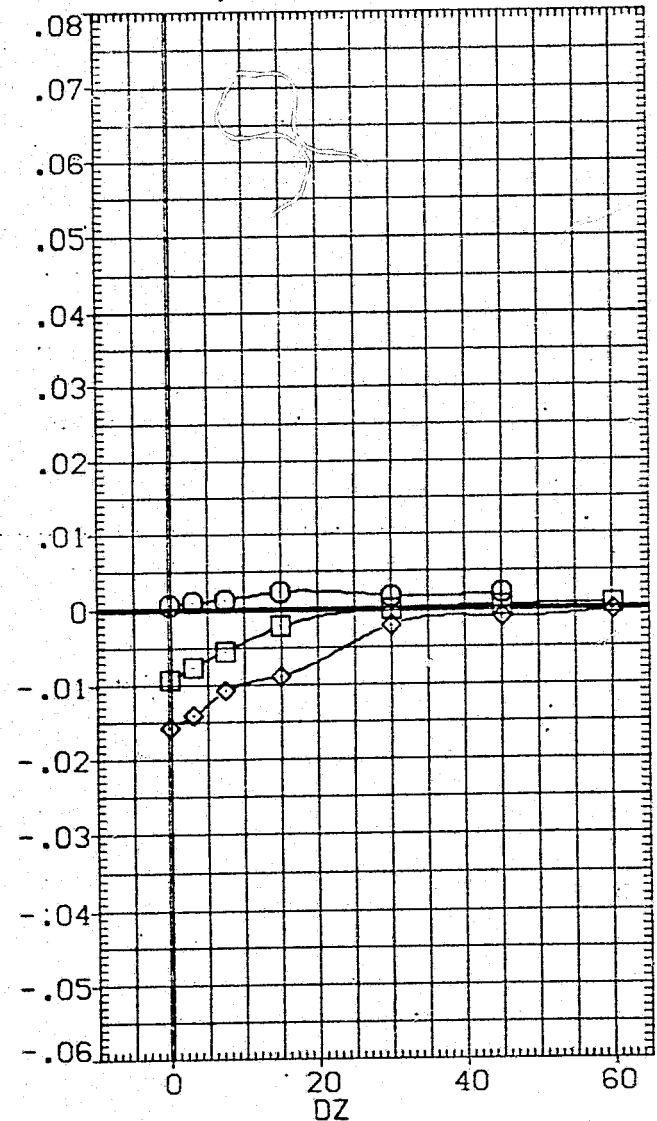
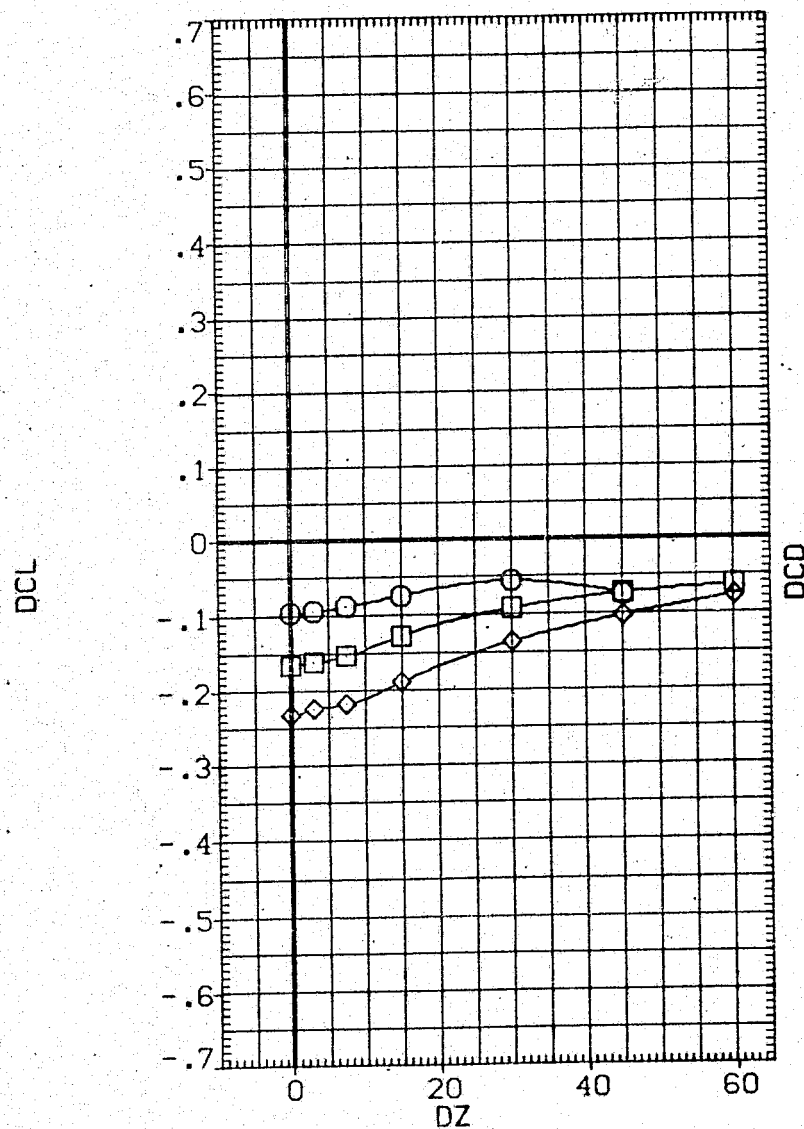


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

.000

.000

5.000

.000

.000

BETAC

ELV-OB

MACH

DX

BETA0

.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF

5500.0000

50.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

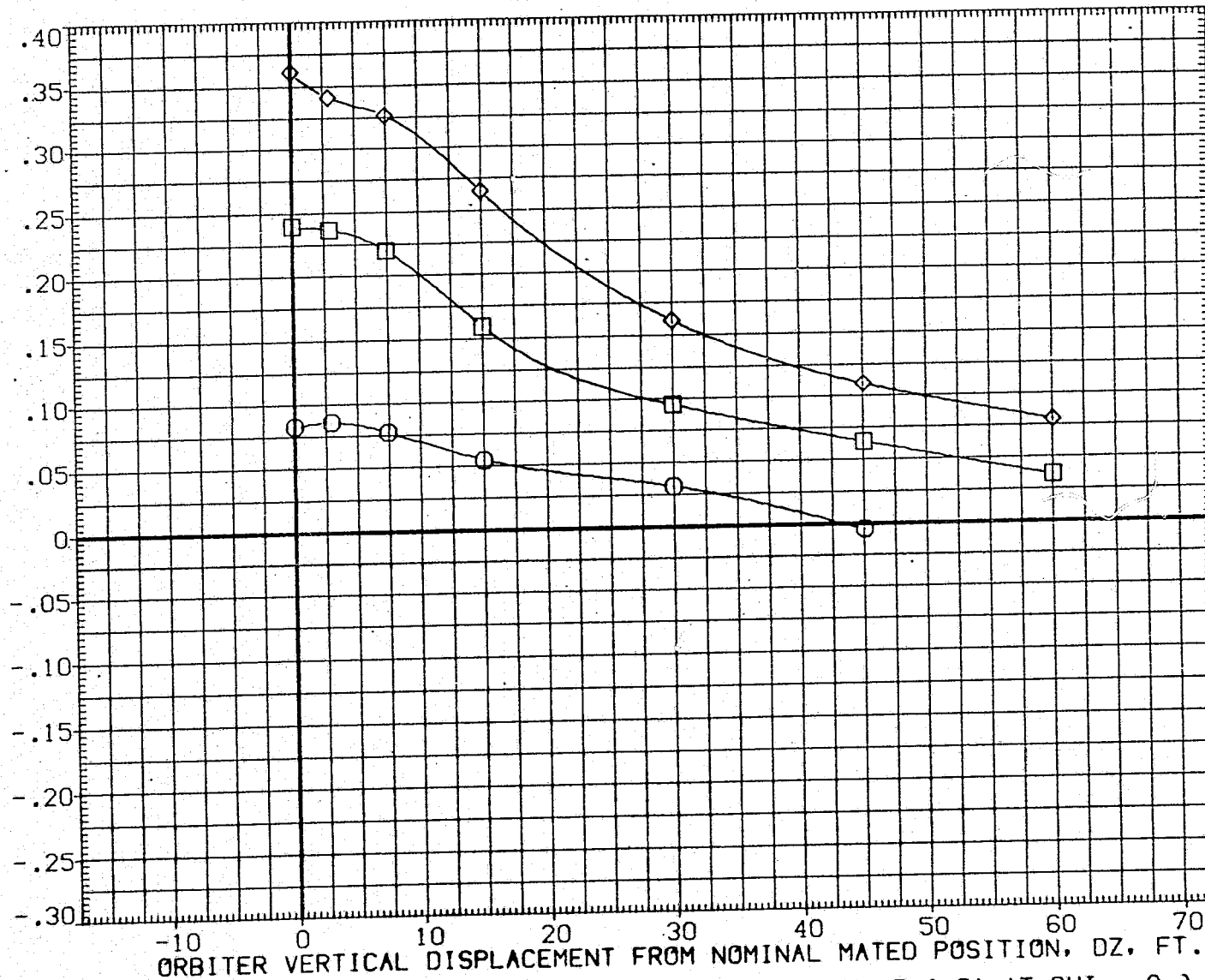


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	6.000	ALPHAC	.000	BETAC	.000
□	10.000	ELV-1B	.000	ELV-0B	3.000
◇	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

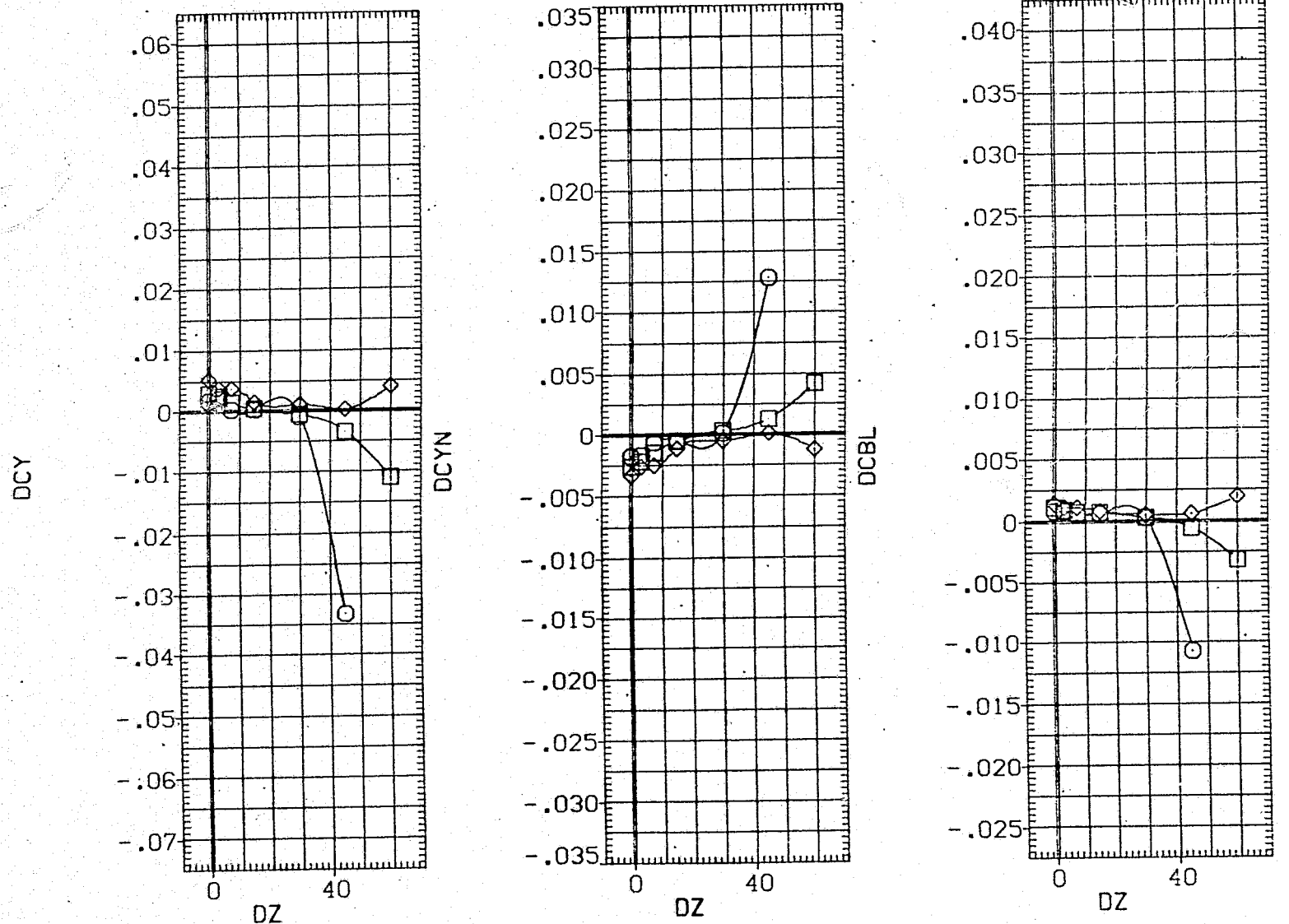


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES		
○	6.000	ALPHAC	.000	BETAC
□	10.000	ELV-1B	.000	ELV-0B
◇	14.000	ELEVON	5.000	MACH
		PHI	.000	DX
		DY	.000	BETA0
				.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

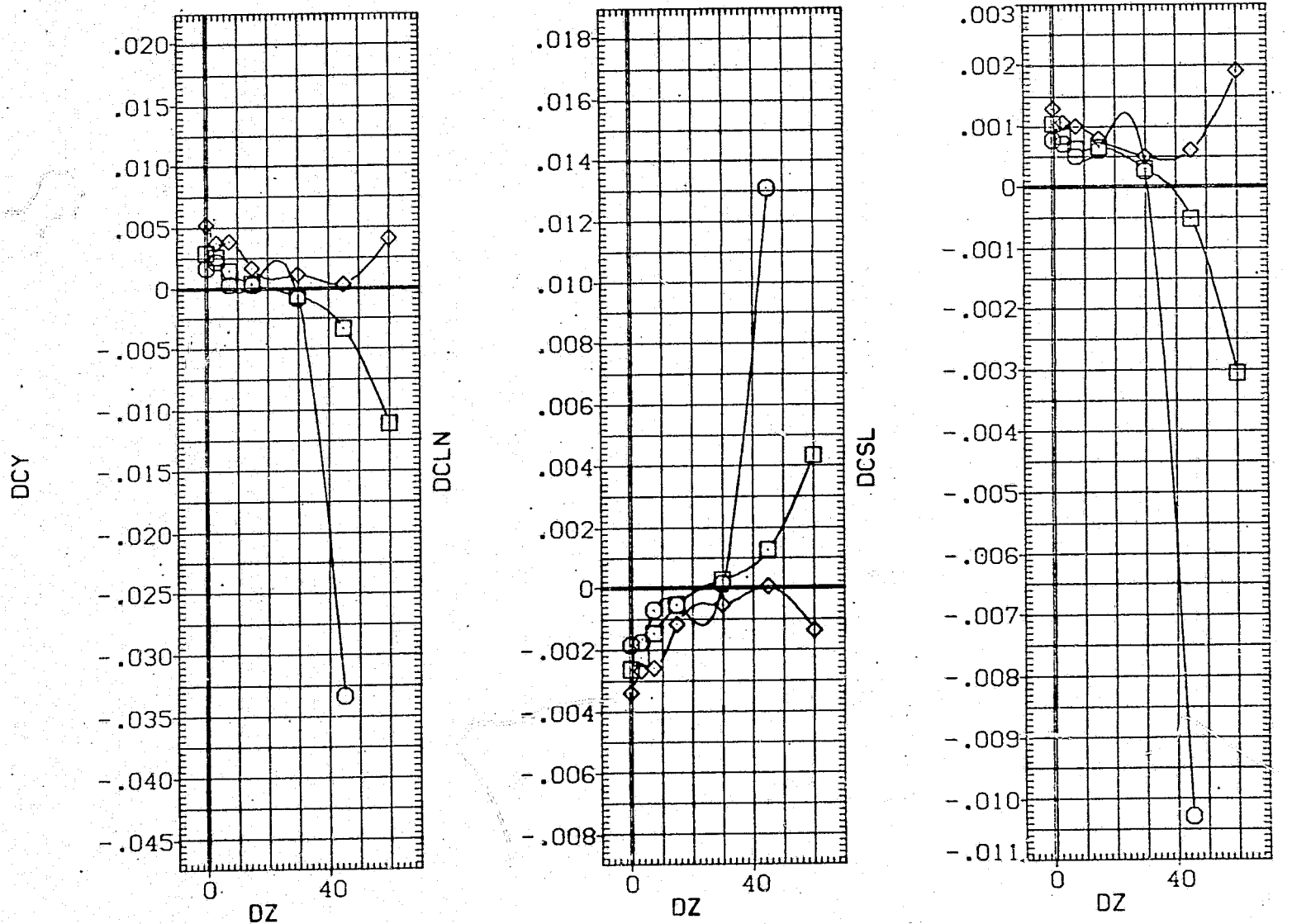


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

10.000

14.000

ELV-18

ELEV0N

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

.000

10.000

ELV-08

MACH

9ETAC

DY

ALPHAC

3.000

.600

.000

.000

4.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.6400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

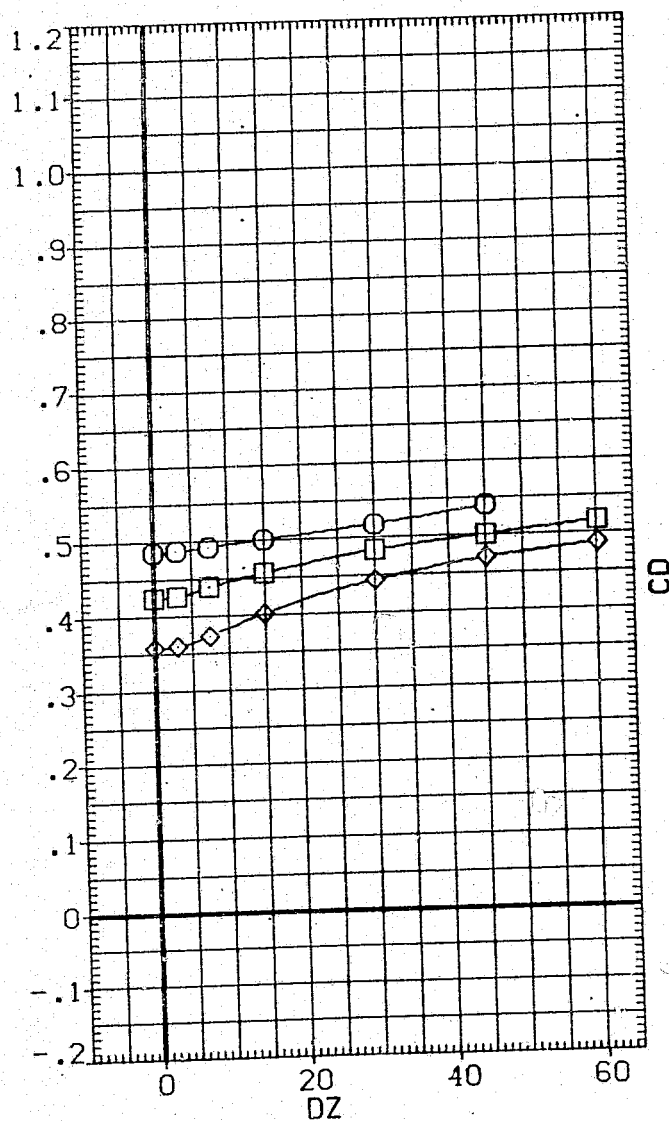
IN.

IN.XC

IN.YC

IN.ZC

CL



CD

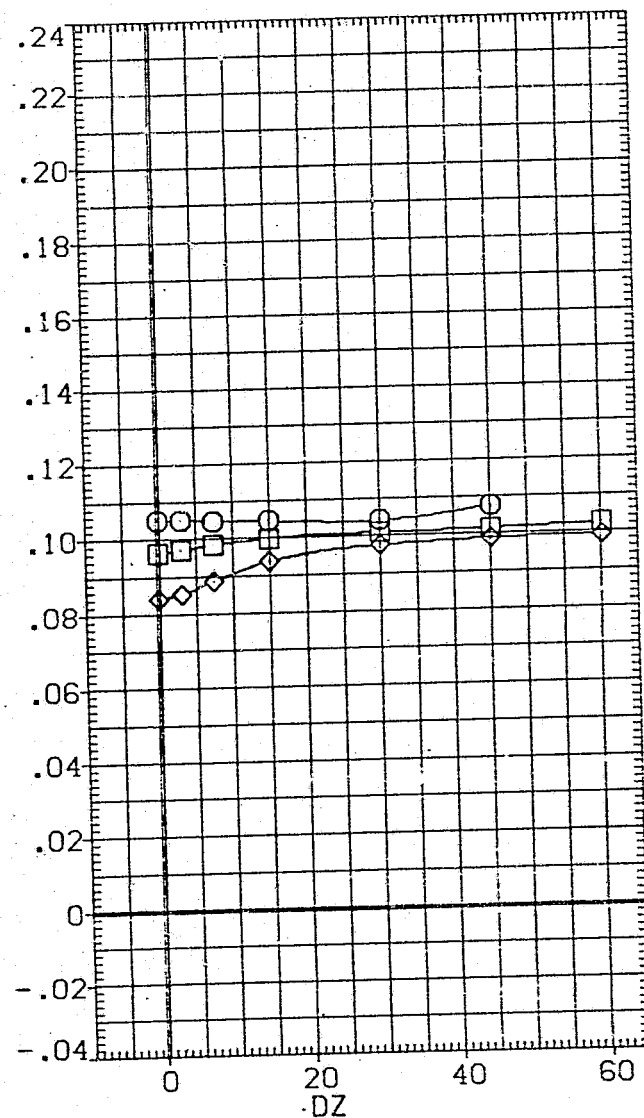


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

ALPHA0
6.000
10.000
14.000ELV-1B
ELEVON
BETA0
PHI
DX

PARAMETRIC VALUES

.000	ELV-0B	3.000
5.000	MACH	.600
.000	BETAC	.000
.000	DY	.000
10.000	ALPHAC	4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

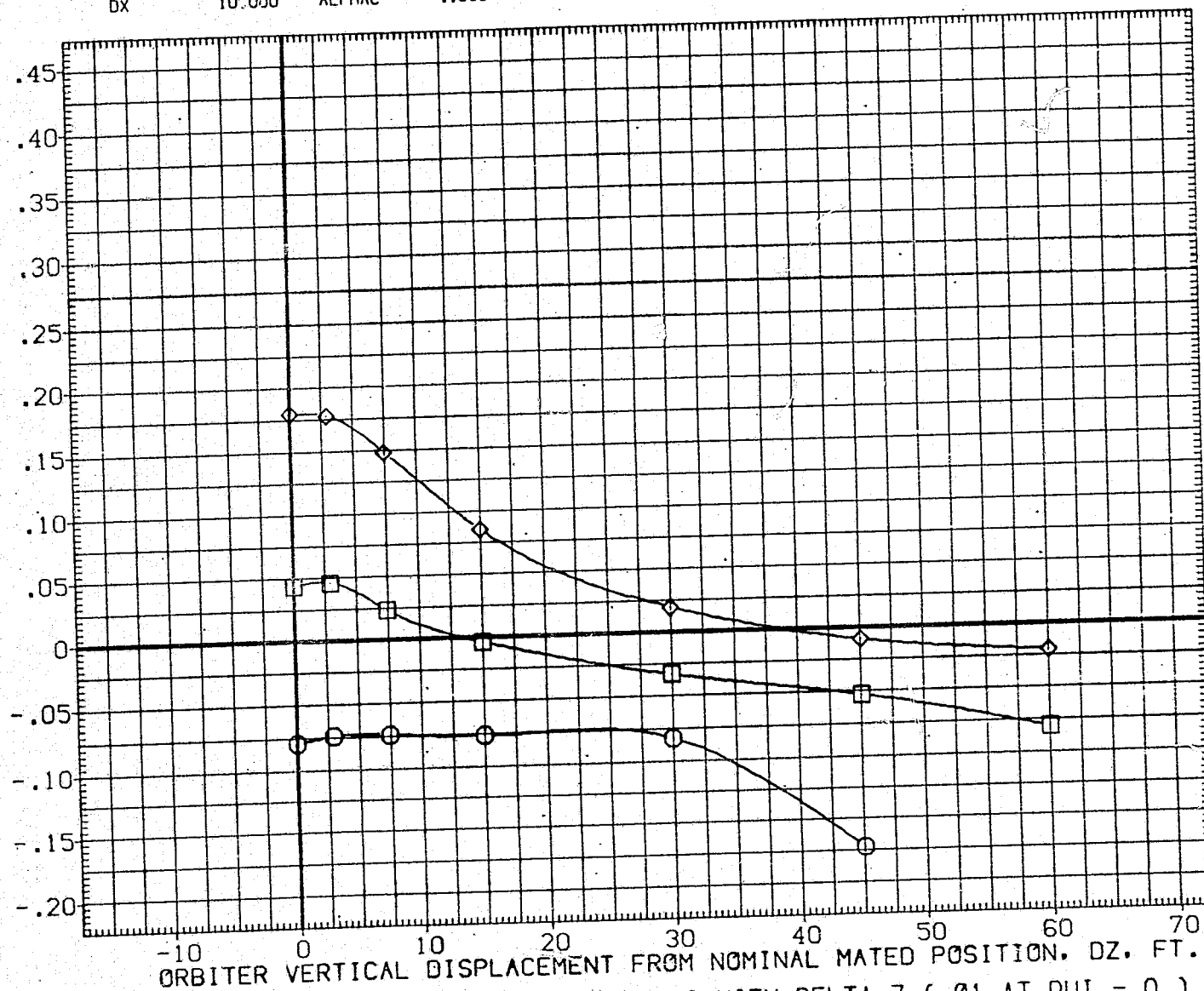


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	6.000	ELEVON	.000	MACH	3.000
□	10.000	BETA0	5.000	BETAC	.600
◇	14.000	PHI	.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION

SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1329.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

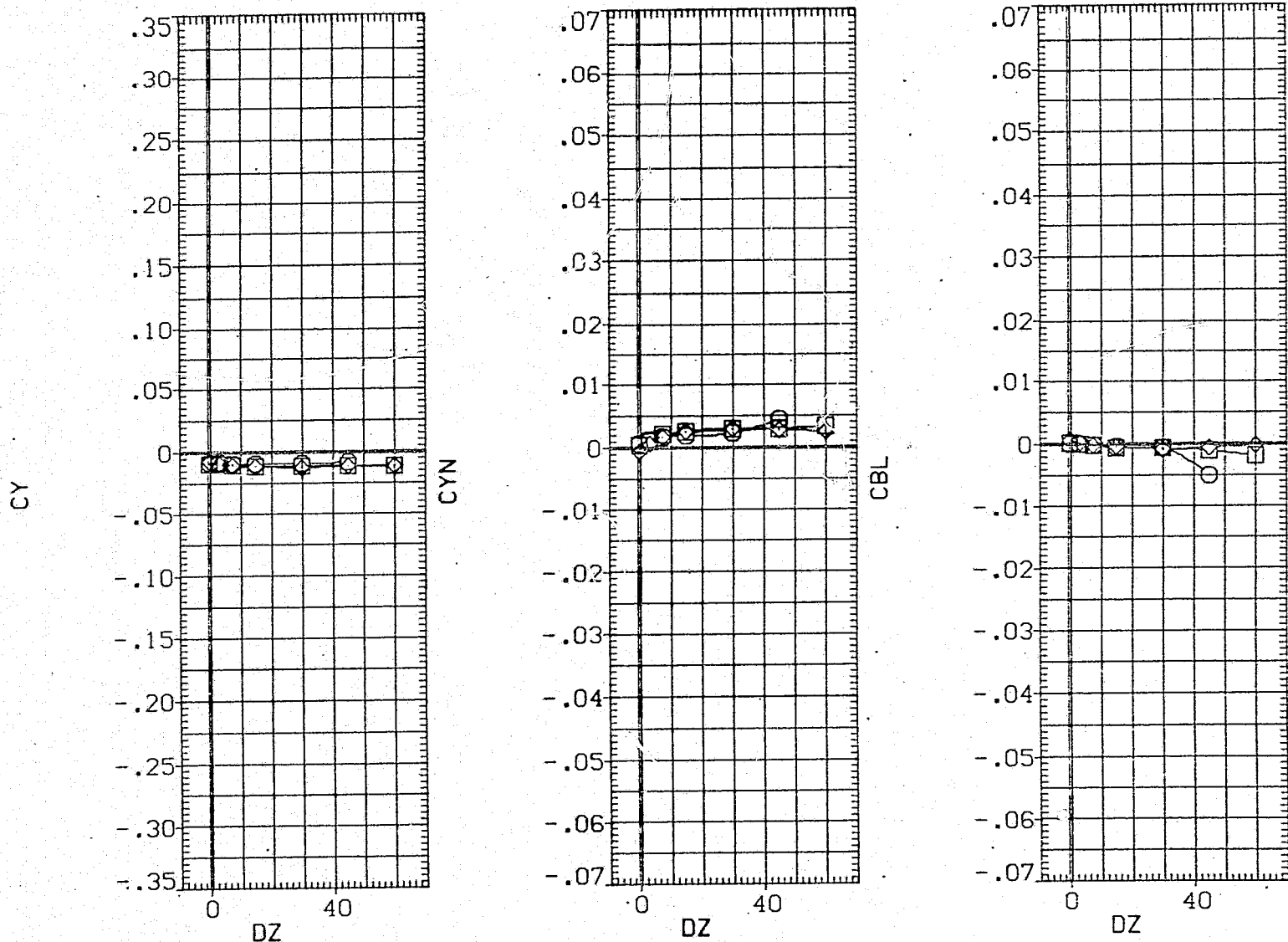


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	6.000		.000	3.000	
□	10.000	ELEVON	5.000	MACH	.600
◇	14.000	BETA0	.000	BETAC	.000
		PHI	.000	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

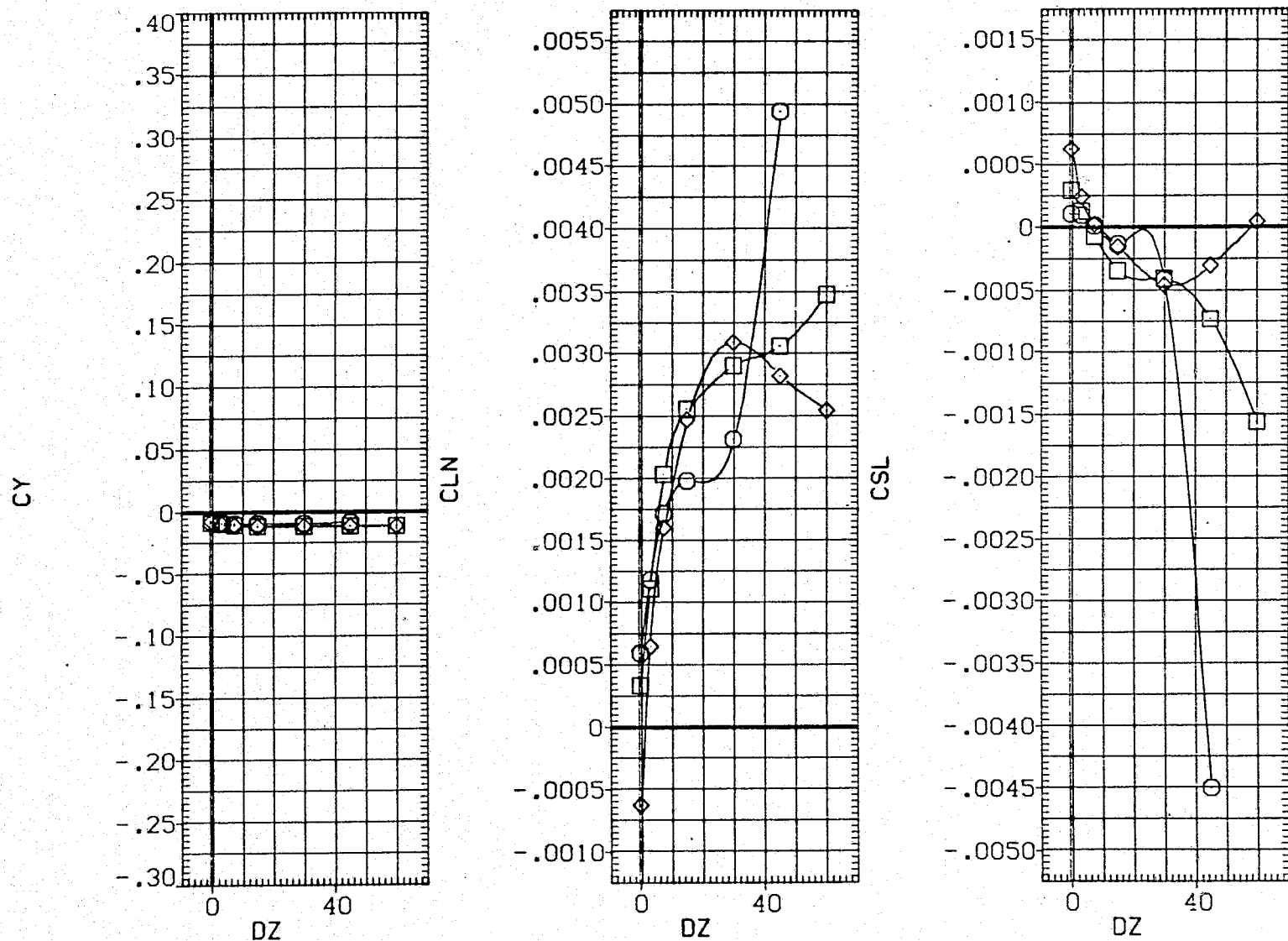


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES		
○	6.000	ALPHAC 4.000	BETAC	.000
□	10.000	ELV-1B .000	ELV-0B	3.000
◇	14.000	ELEVON 5.000	MACH	.600
		PHI .000	DX	10.000
		DY .000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

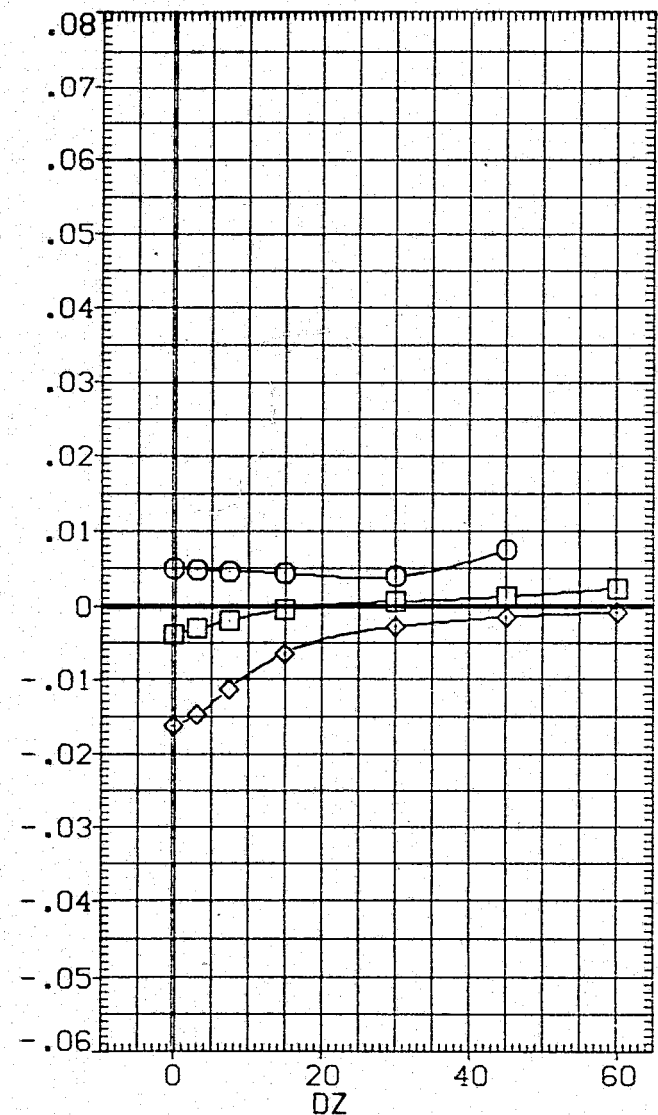
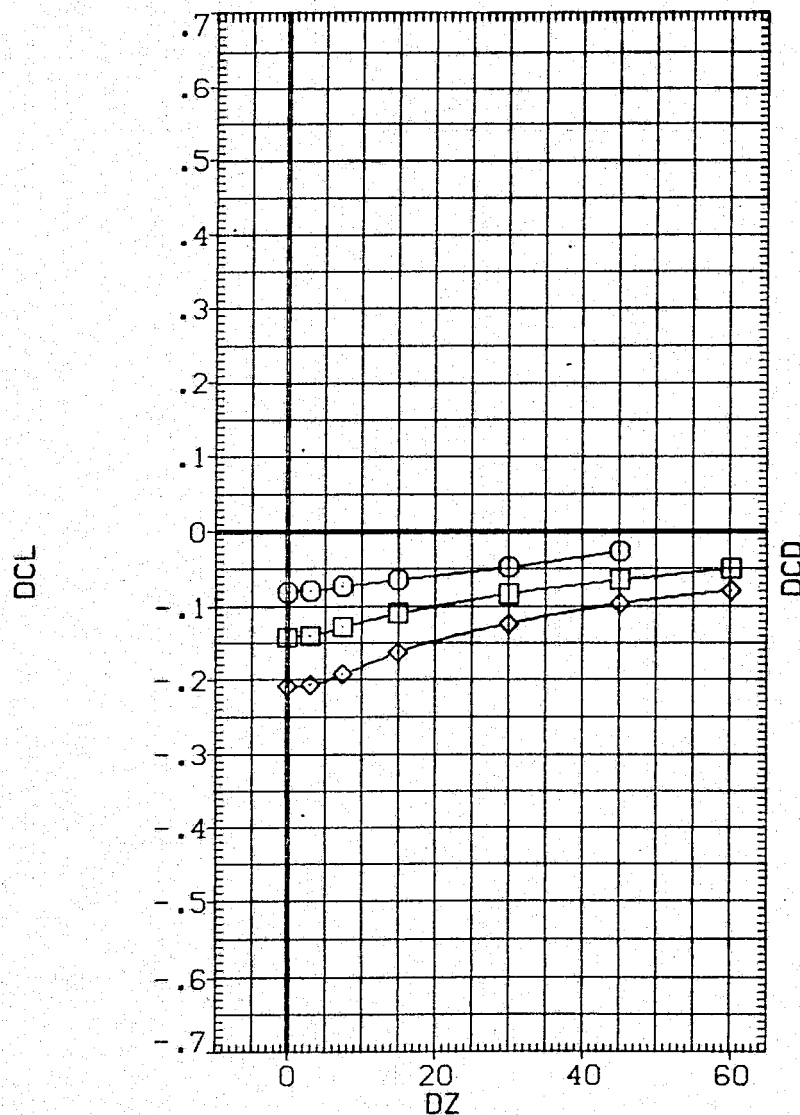


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	6.000	ALPHAC 4.000 BETAC .000
□	10.000	ELV-IB .000 ELV-OB 3.000
◇	14.000	ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY .000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

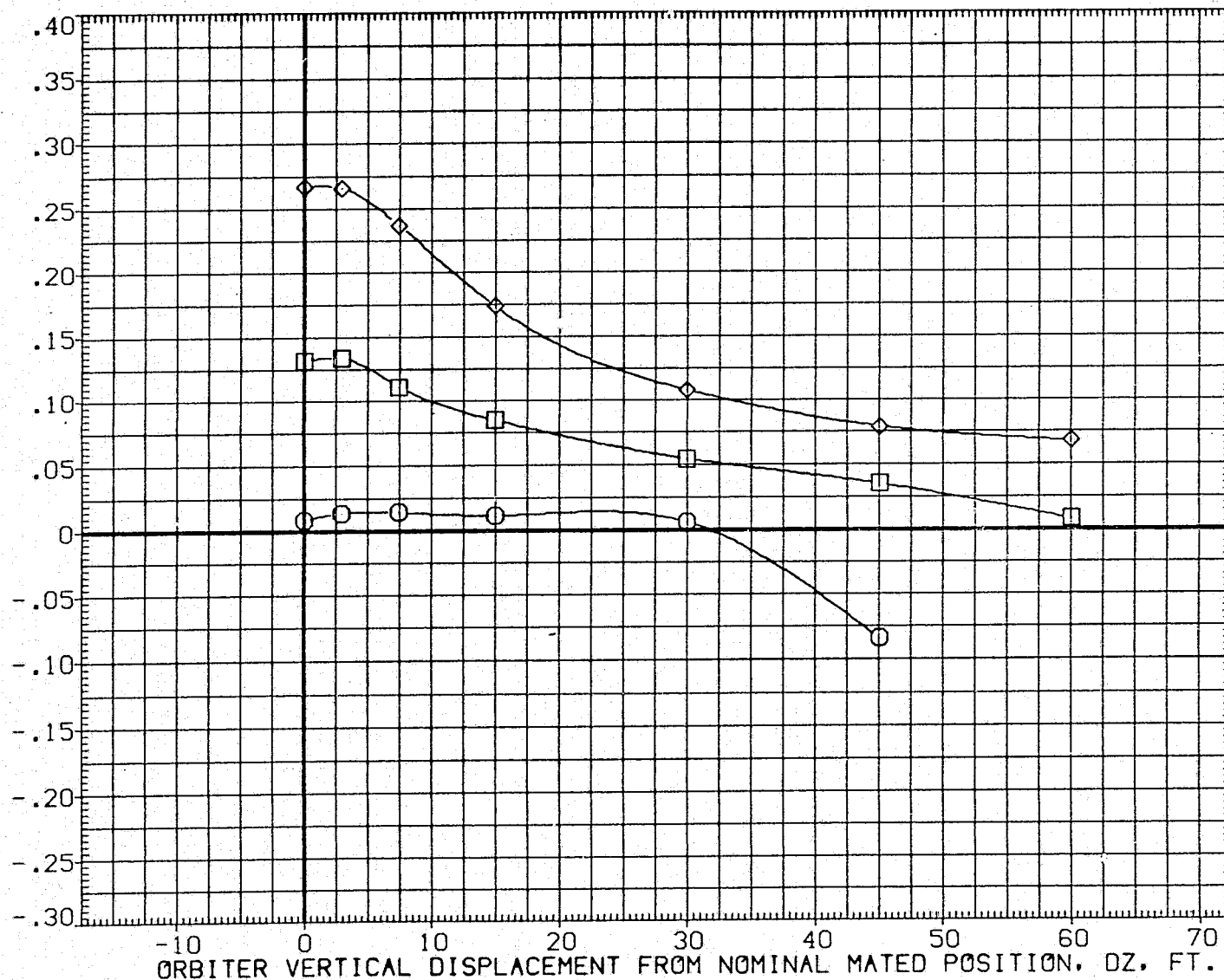


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	6.000	ALPHAC 4.000 BETAC .000
□	10.000	ELV-1B .000 ELV-0B 3.000
◇	14.000	ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY .000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

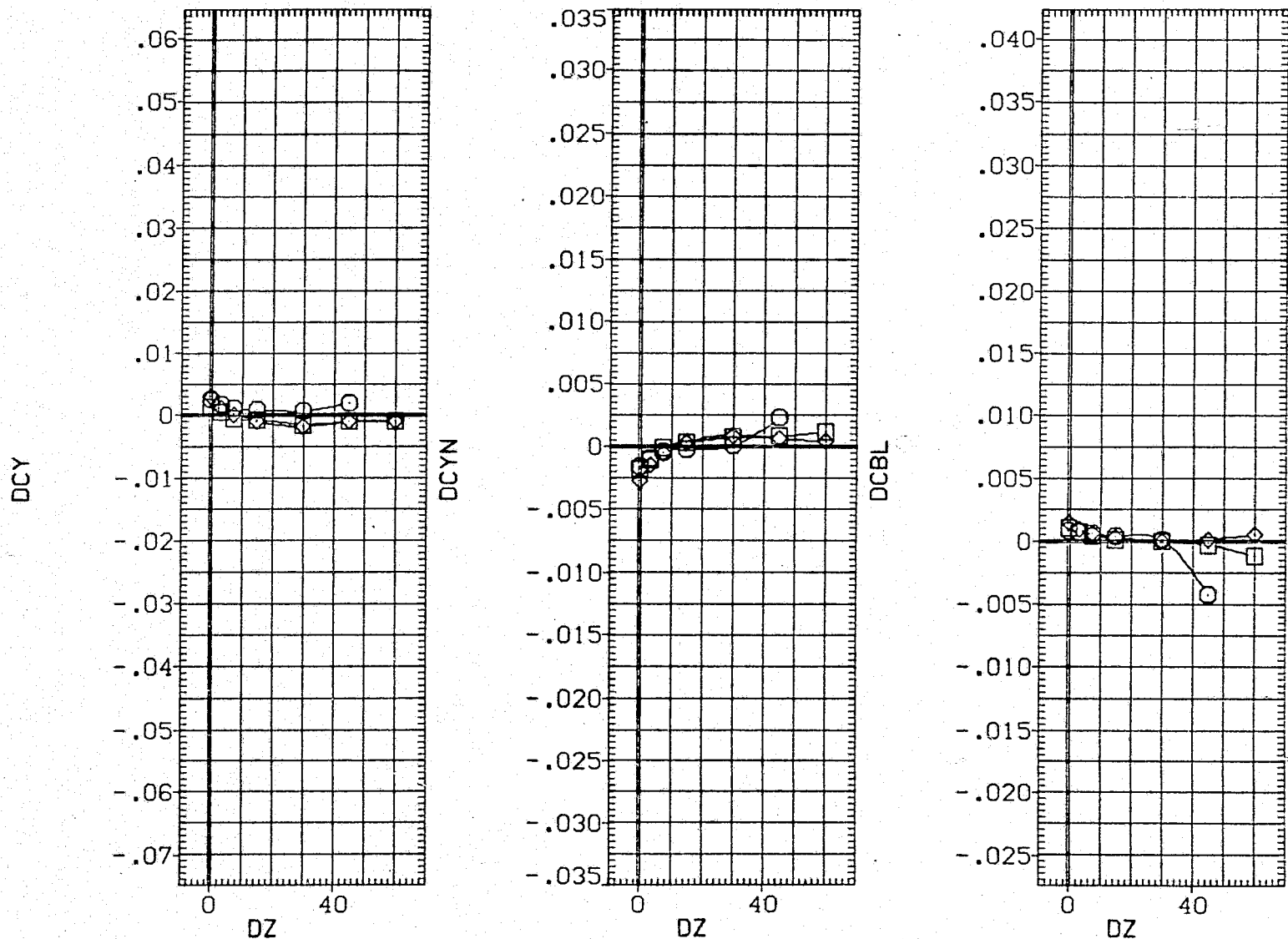


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	6.000	ALPHAC	4.000	BETAC	.000
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
◇		.PHI	.000	DX	10.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

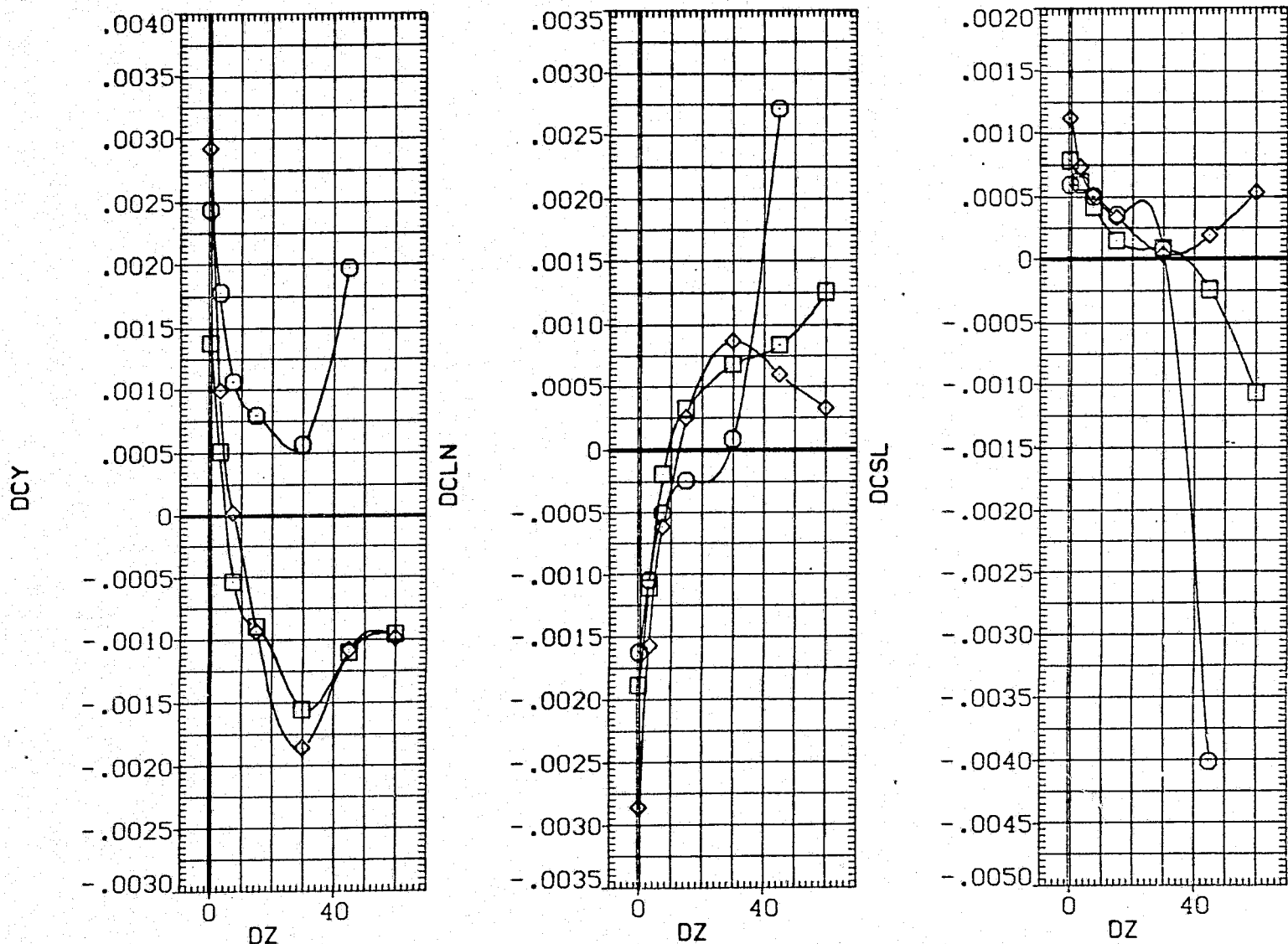


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES	ELV-0B	3.000
○	6.000	ELV-1B	.000	
□	10.000	ELEVON	5.000	.600
◇	14.000	BETA0	.000	.000
		PHI	.000	.000
		DX	10.000	ALPHAC
				8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

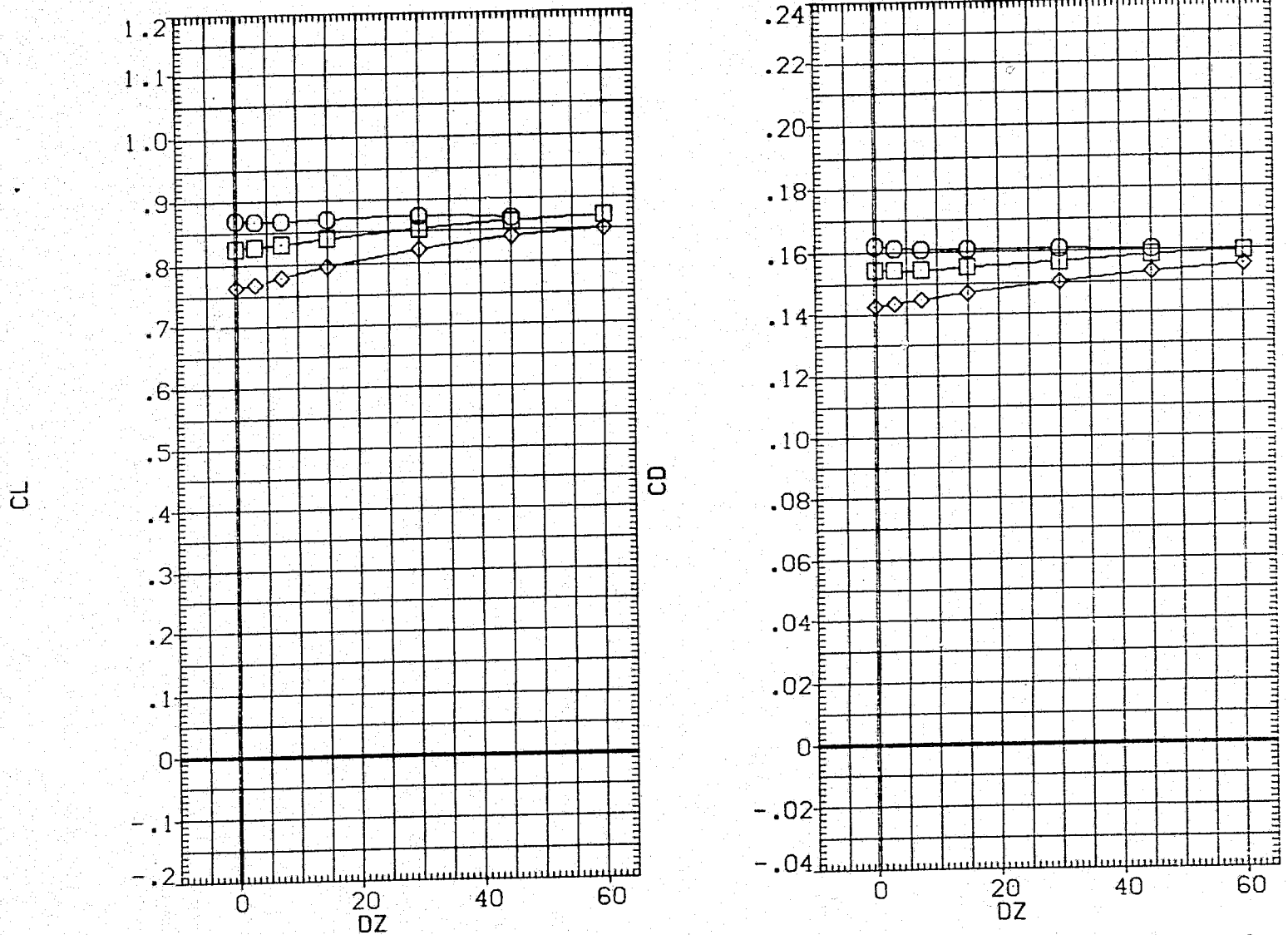


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	6.000	.000		3.000	
□	10.000	5.000		MACH	.600
◇	14.000	.000		BETAC	.000
		PHI	.000	DY	.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

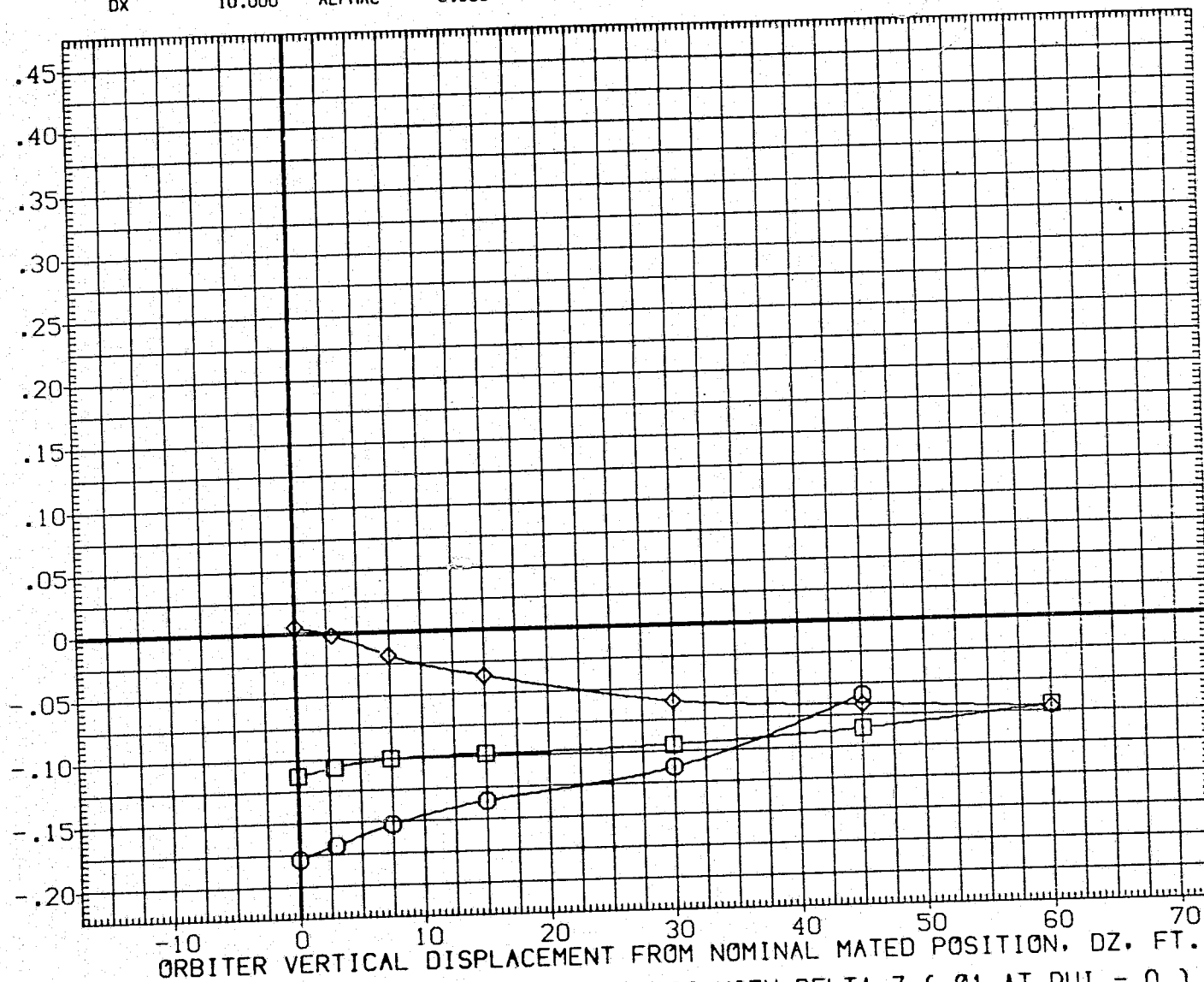


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	6.000	ELEV0N	.000	MACH	3.000
□	10.000	BETA0	5.000	BETAC	.600
◇	14.000	PHI	.000	DY	.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9030	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

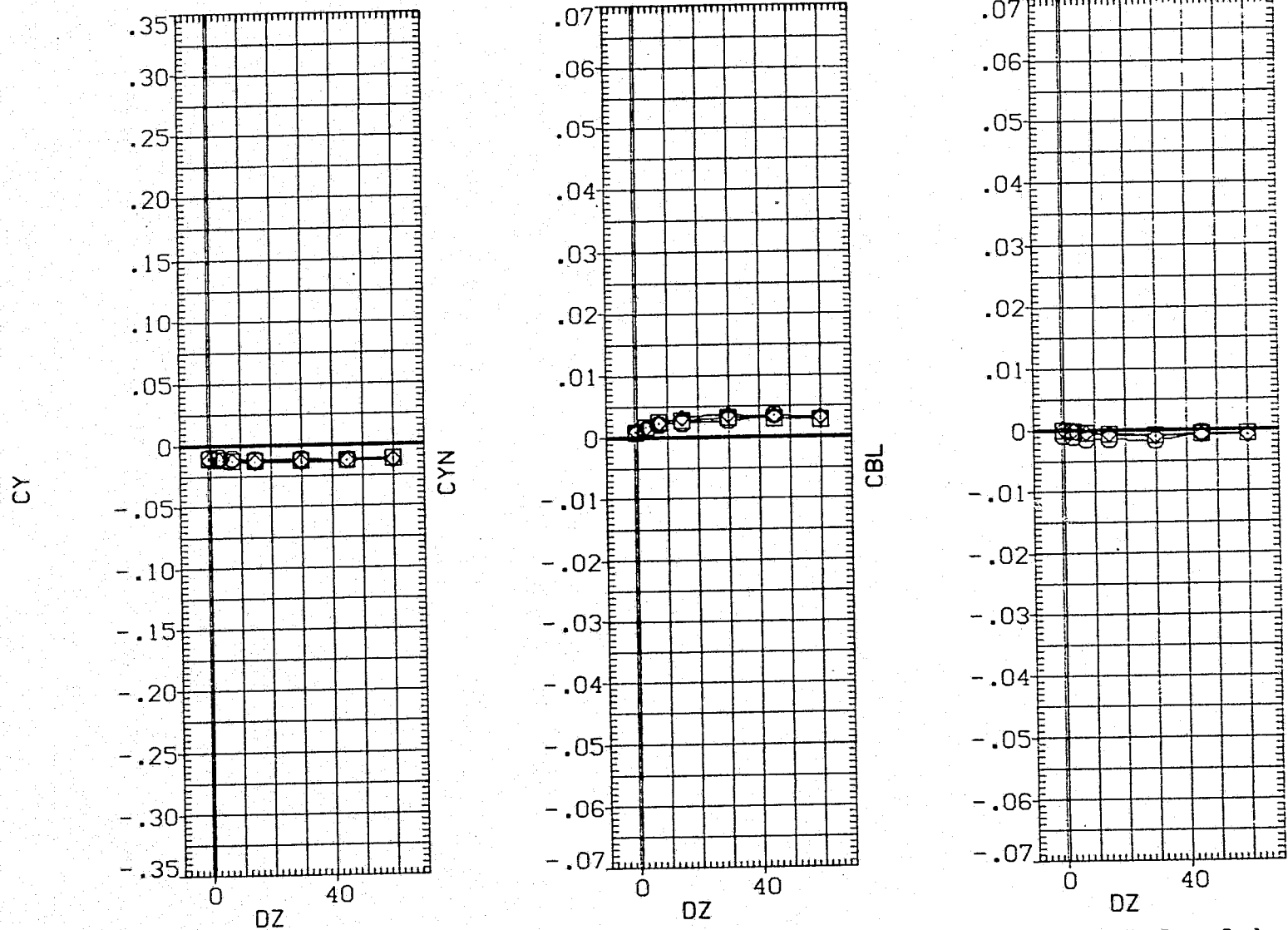


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	6.000	ELEVON	.000	3.000	
□	10.000	BETA0	5.000	.600	
◇	14.000	PHI	.000	.000	
		DX	10.000	.000	
			ALPHAC	8.000	

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	190.8000	IN.ZC
SCALE	.0300	

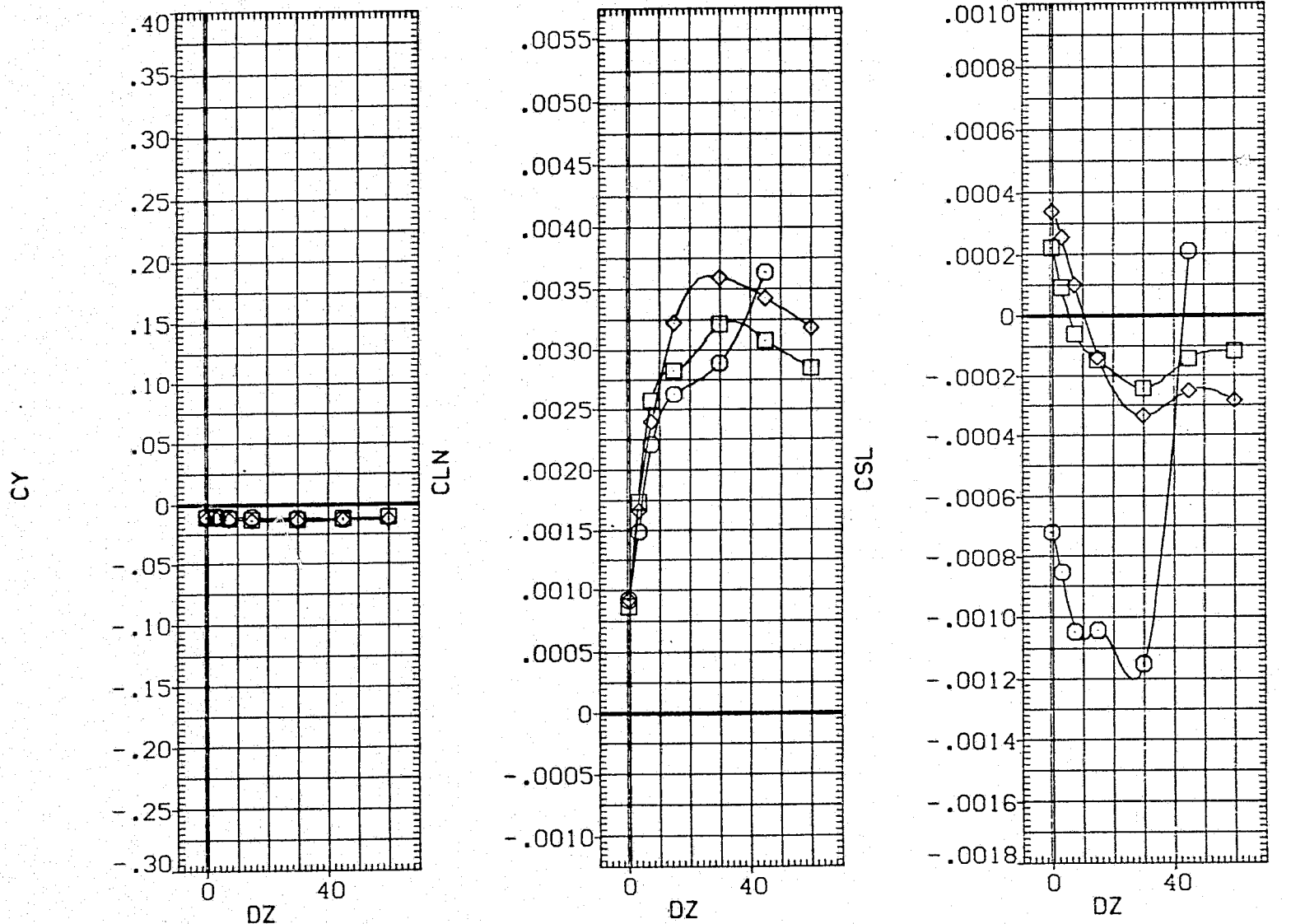


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	6.000	ALPHAC 8.000 BETAC .000
□	10.000	ELV-IB .000 ELV-OB 3.000
◇	14.000	ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
	DY	.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

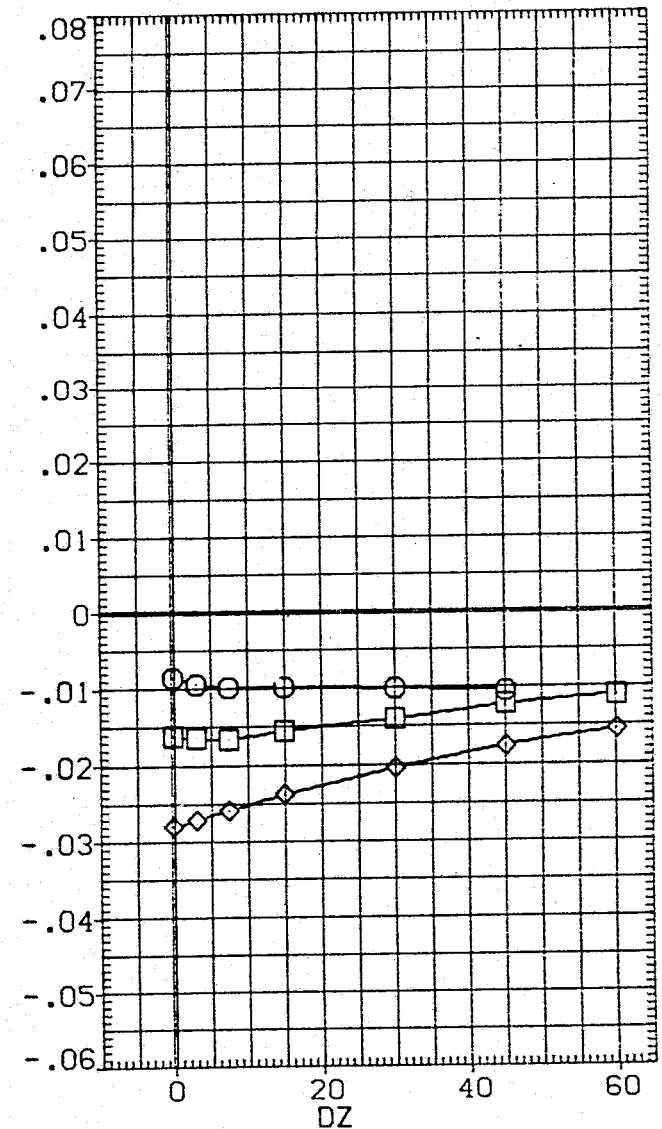
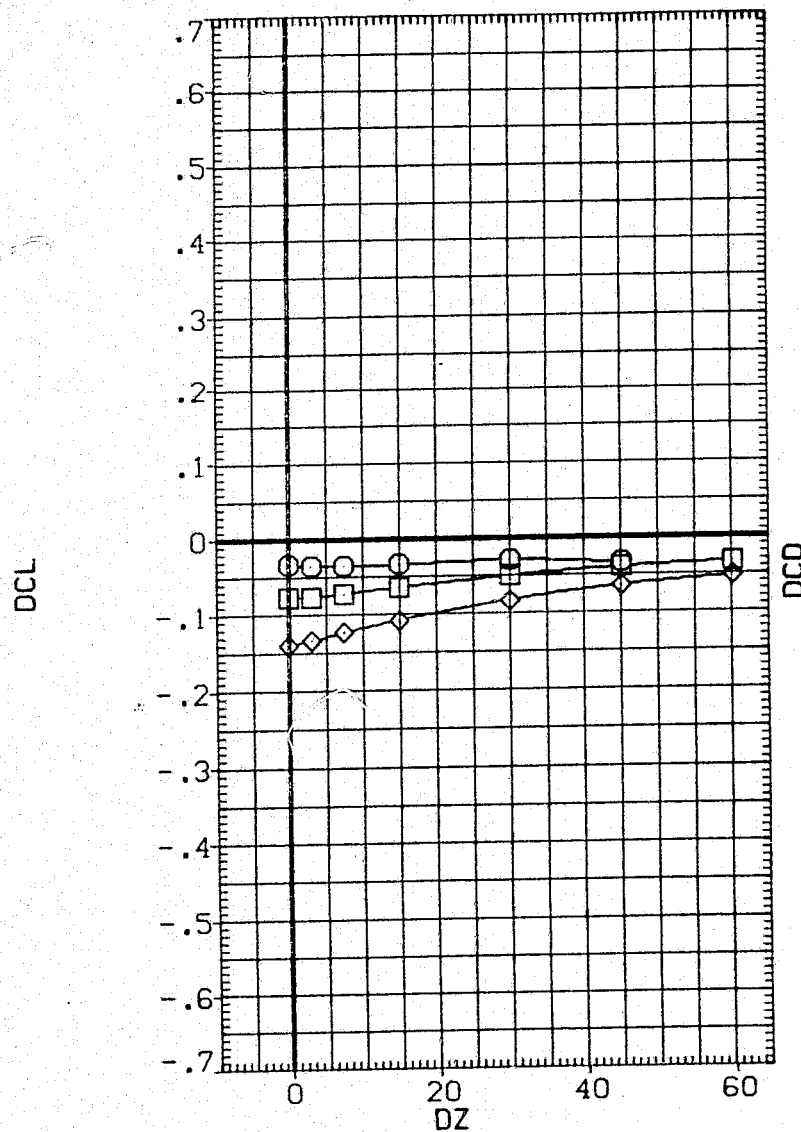


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

ALPHAC

10.000

ELV-1B

14.000

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

BETAC

.000

.000

ELV-0B

3.000

5.000

MACH

.600

.000

DX

10.000

.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000

SQ.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

IN.YC

ZMRP 190.8000

IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

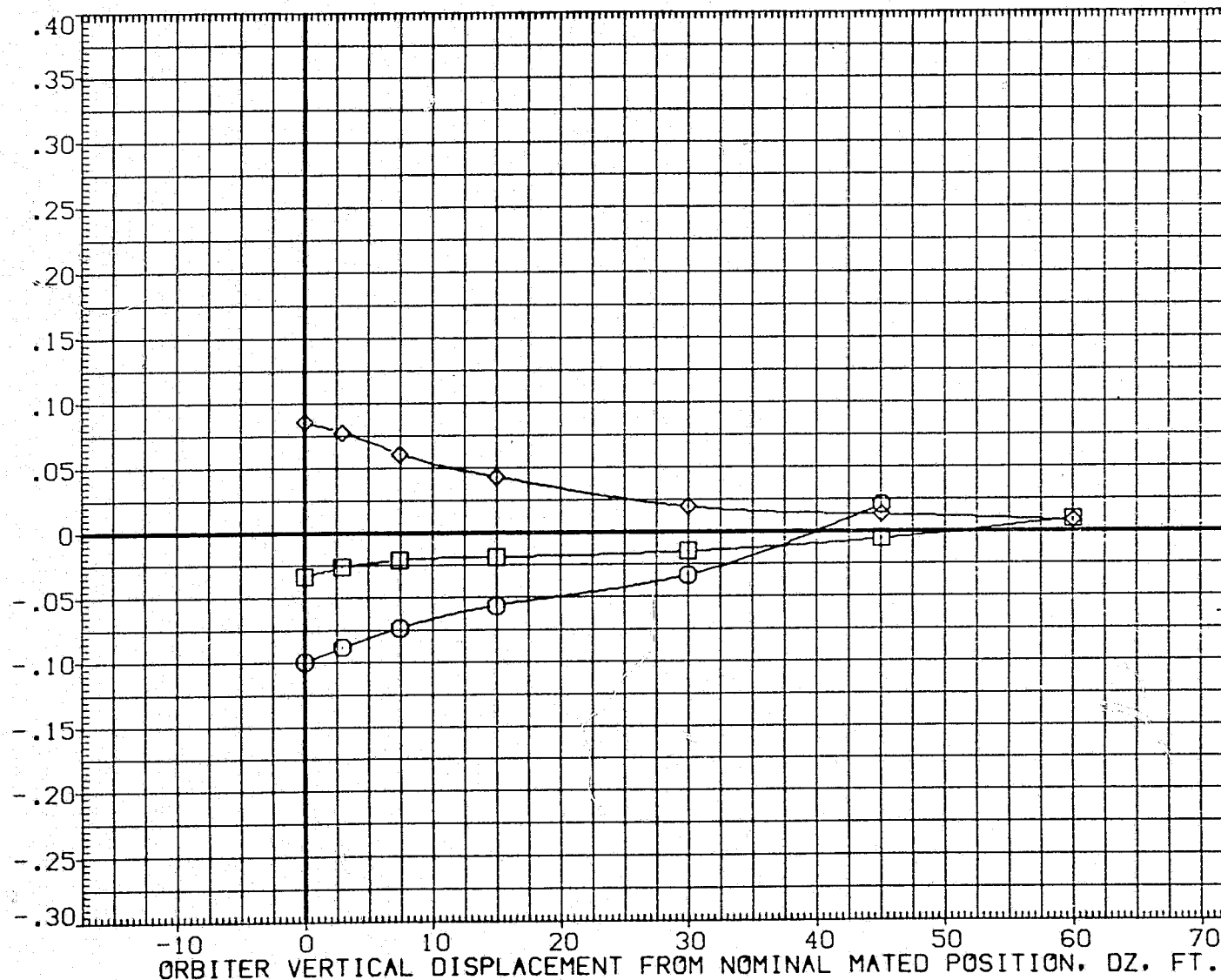


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

6.000

ALPHAC

10.000

14.000

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

.000

.000

.000

BETAC

ELV-0B

MACH

DX

BETA0

.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

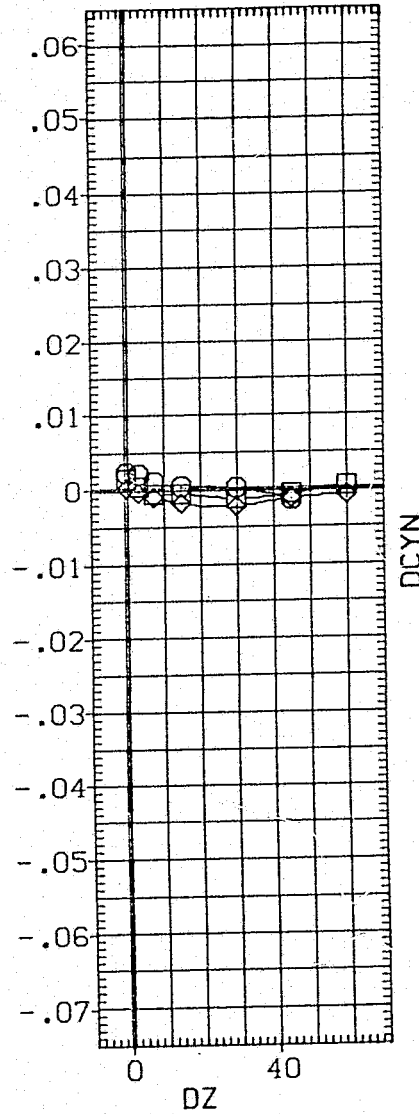
IN.

IN.XC

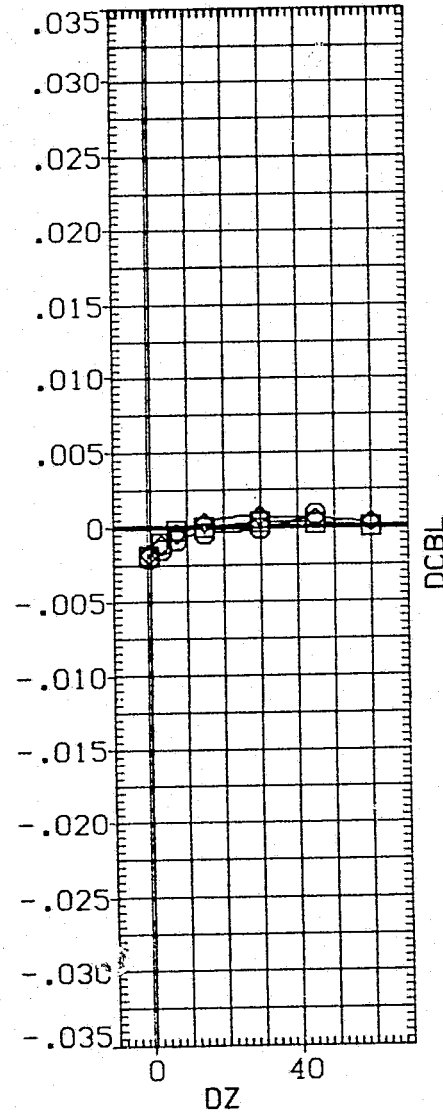
IN.YC

IN.ZC

DCY



DCYN



DCBL

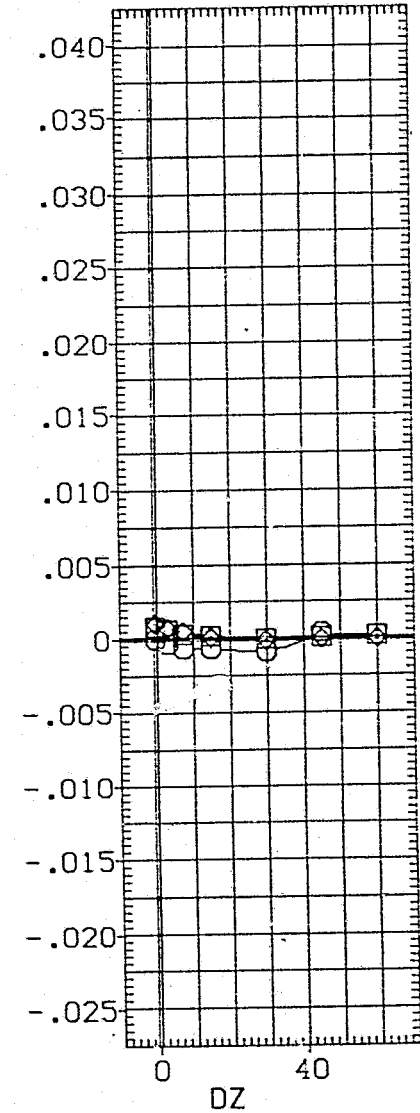


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	6.000	ALPHAC	8.000	BETAC	.000
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
◇		PHI	.000	DX	10.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION

SREF	5500.0000	SD.FY.
LREF	327.7800	IN.
SREF	2348.3400	IN.
XMRP	1337.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

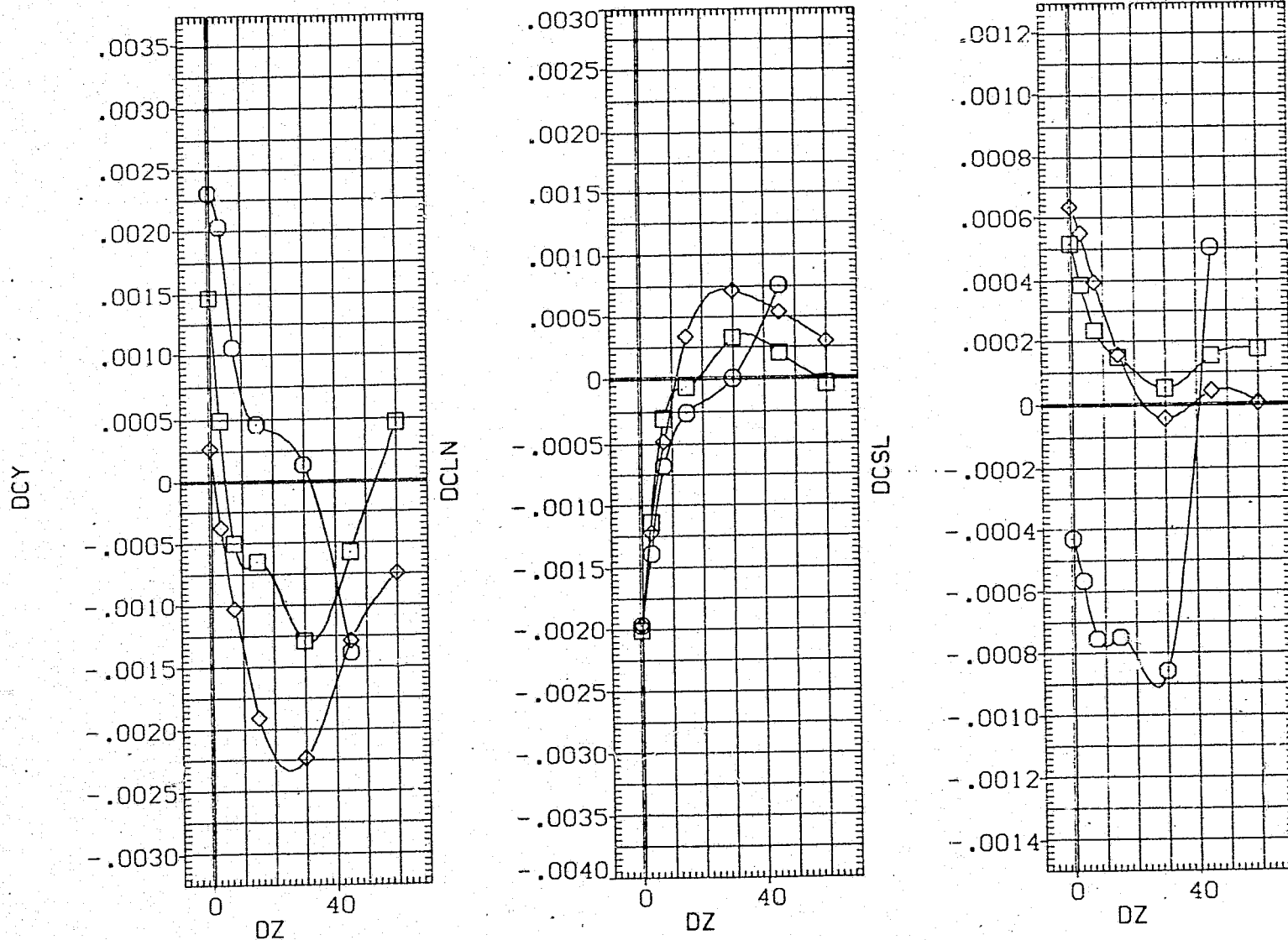


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000
10.000
14.000

BETA0

.000
ELV-08
MACH
PHI
ALPHA0

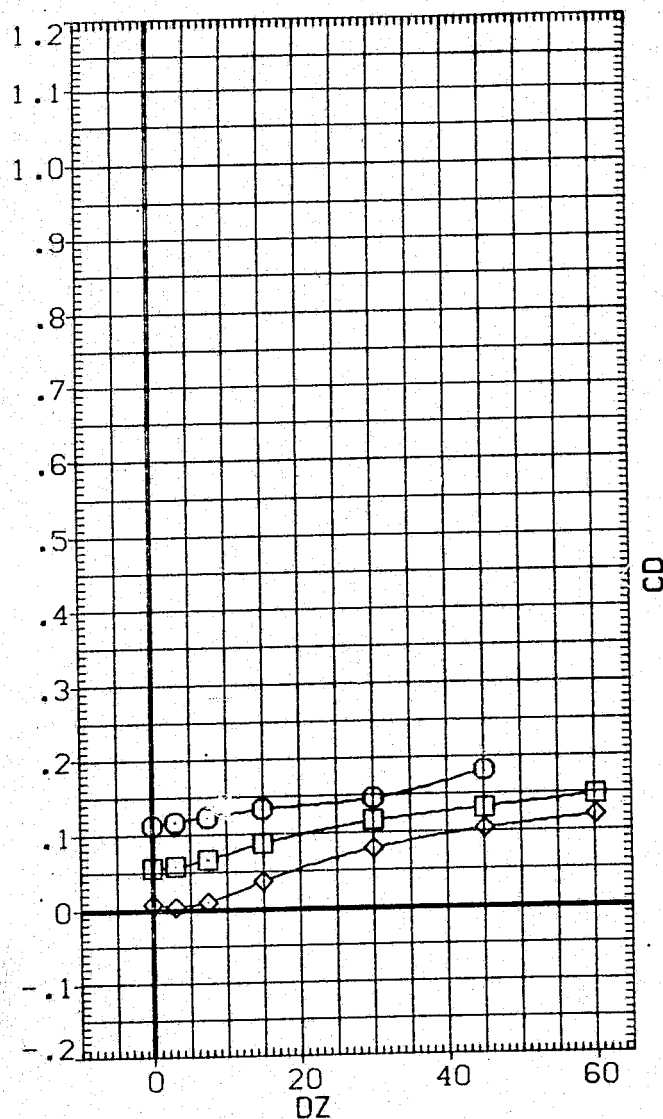
PARAMETRIC VALUES

.000 ELV-18 .000
3.000 ELEVON 5.000
.600 BETA0 .000
.000 DY .000
.000 DX 20.000

REFERENCE INFORMATION

SREF 5500.0000 50.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

CL



CD

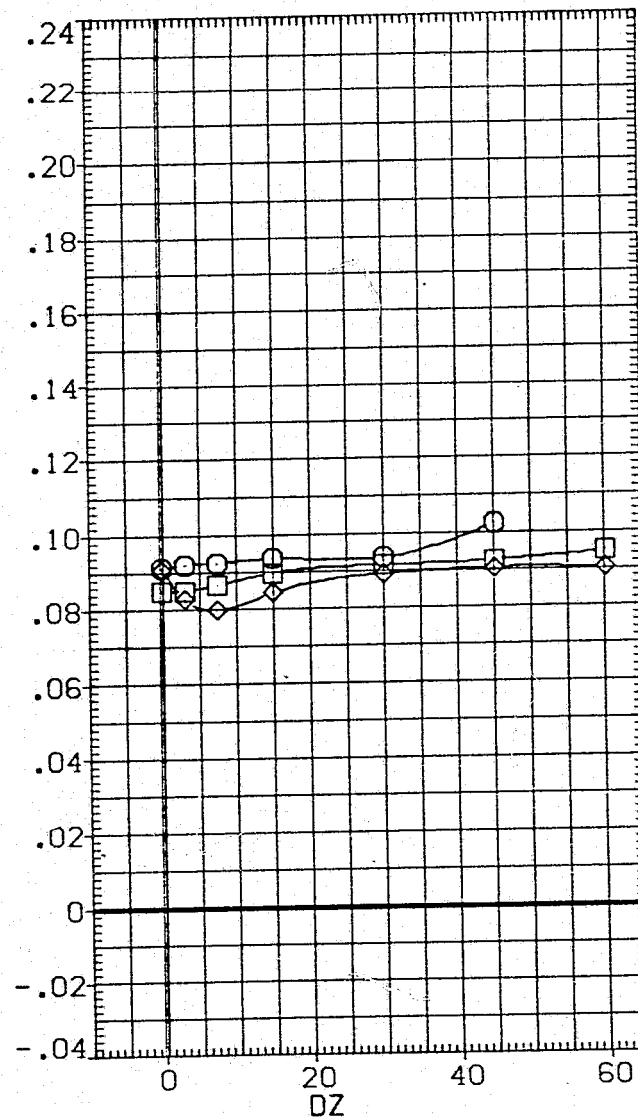


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

BETAC

.000

ELV-1B

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

PHI

.000

DY

.000

ALPHAC

.000

DX

20.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

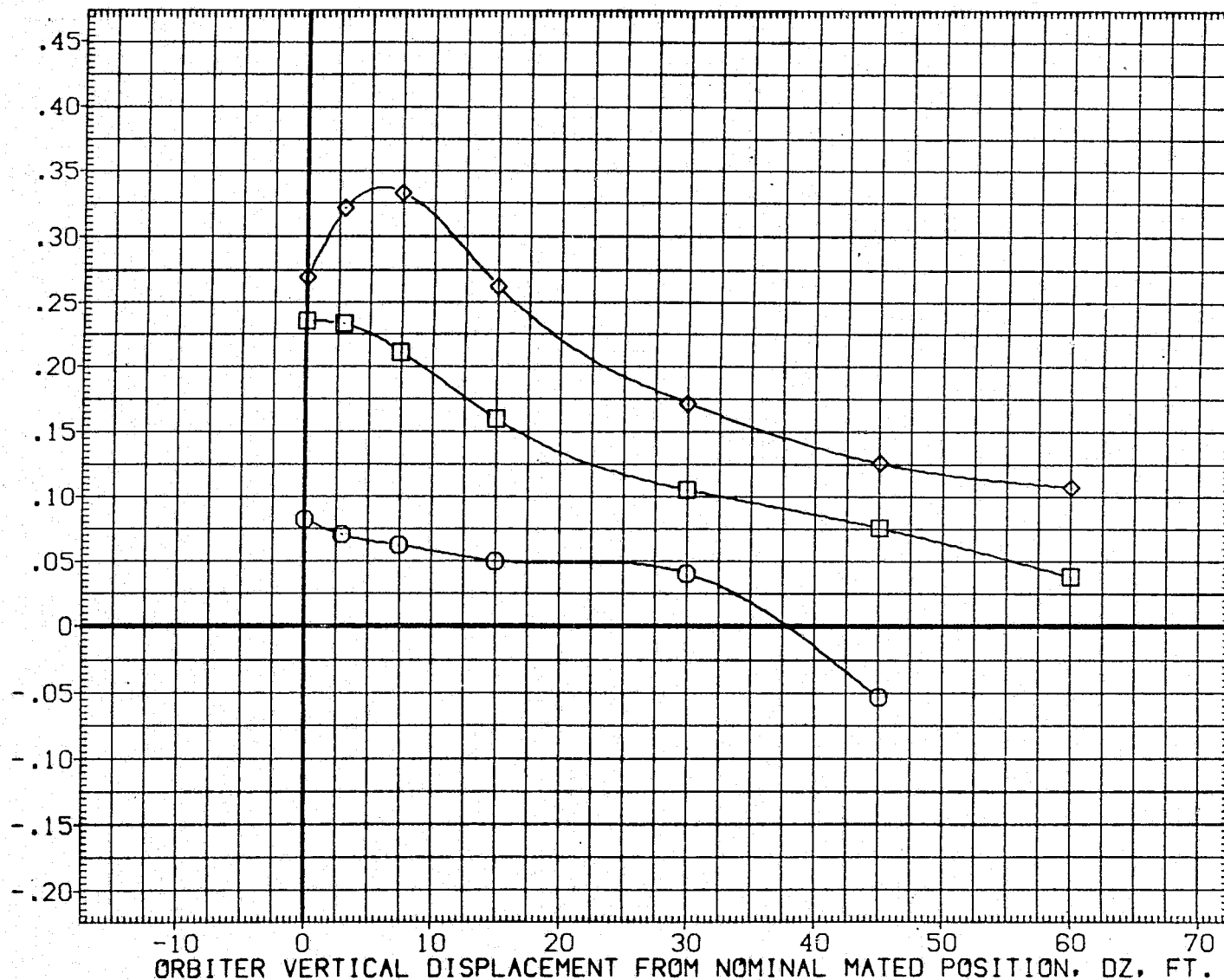


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	BETAC	PARAMETRIC VALUES	ELV-18	
○	6.000		.000		.000
□	10.000	ELV-08	3.000	ELEVON	5.000
◇	14.000	MACH	.600	BETA0	.000
		PHI	.000	DY	.000
		ALPHAC	.000	DX	20.000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.9400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

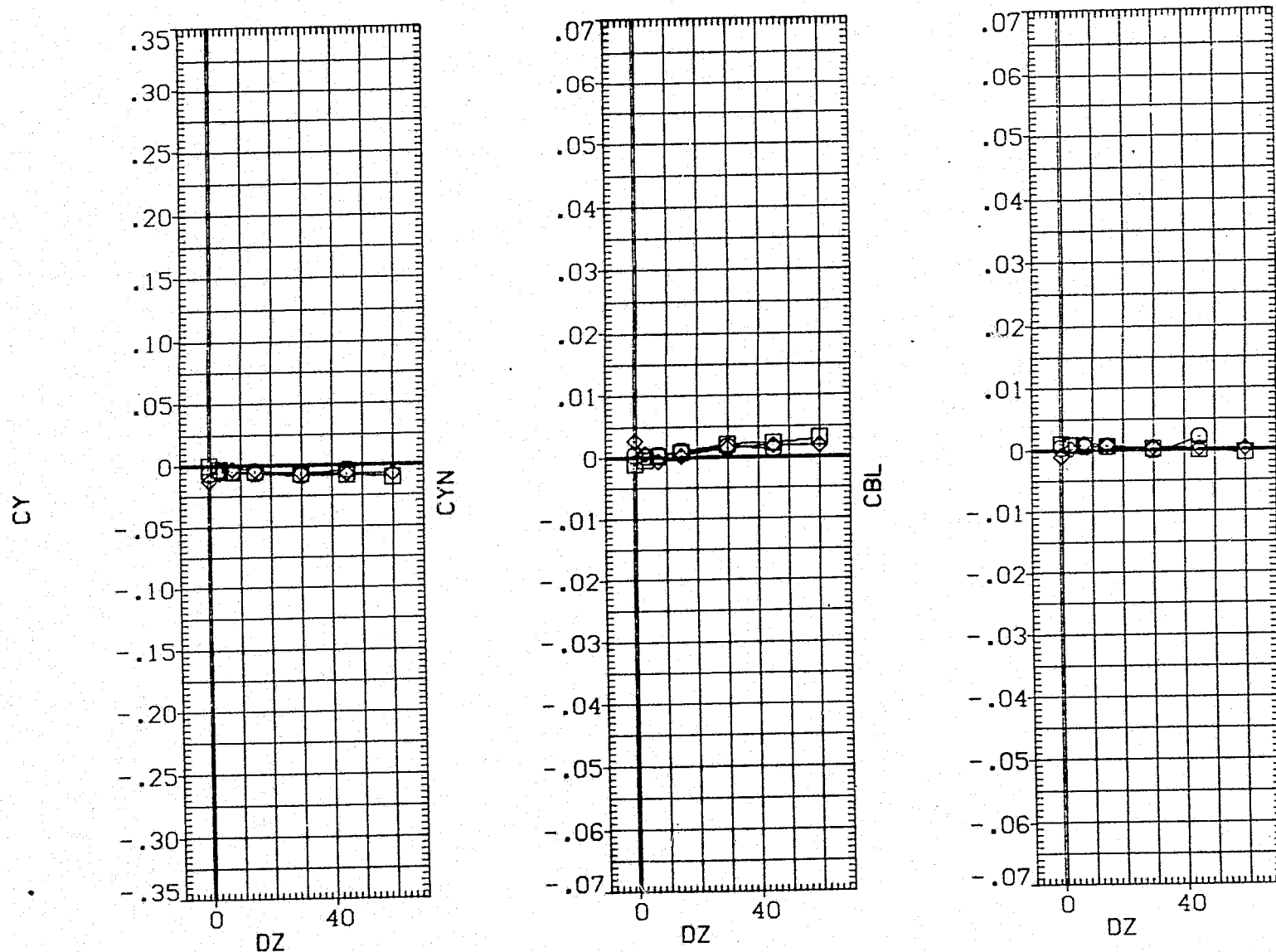


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	6.000	BETAC	.000	ELV-IB	.000
□	10.000	ELV-OB	3.000	ELEVON	5.000
◇	14.000	MACH	.600	BETA0	.000
		PHI	.000	DY	.000
		ALPHAC	.000	DX	20.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

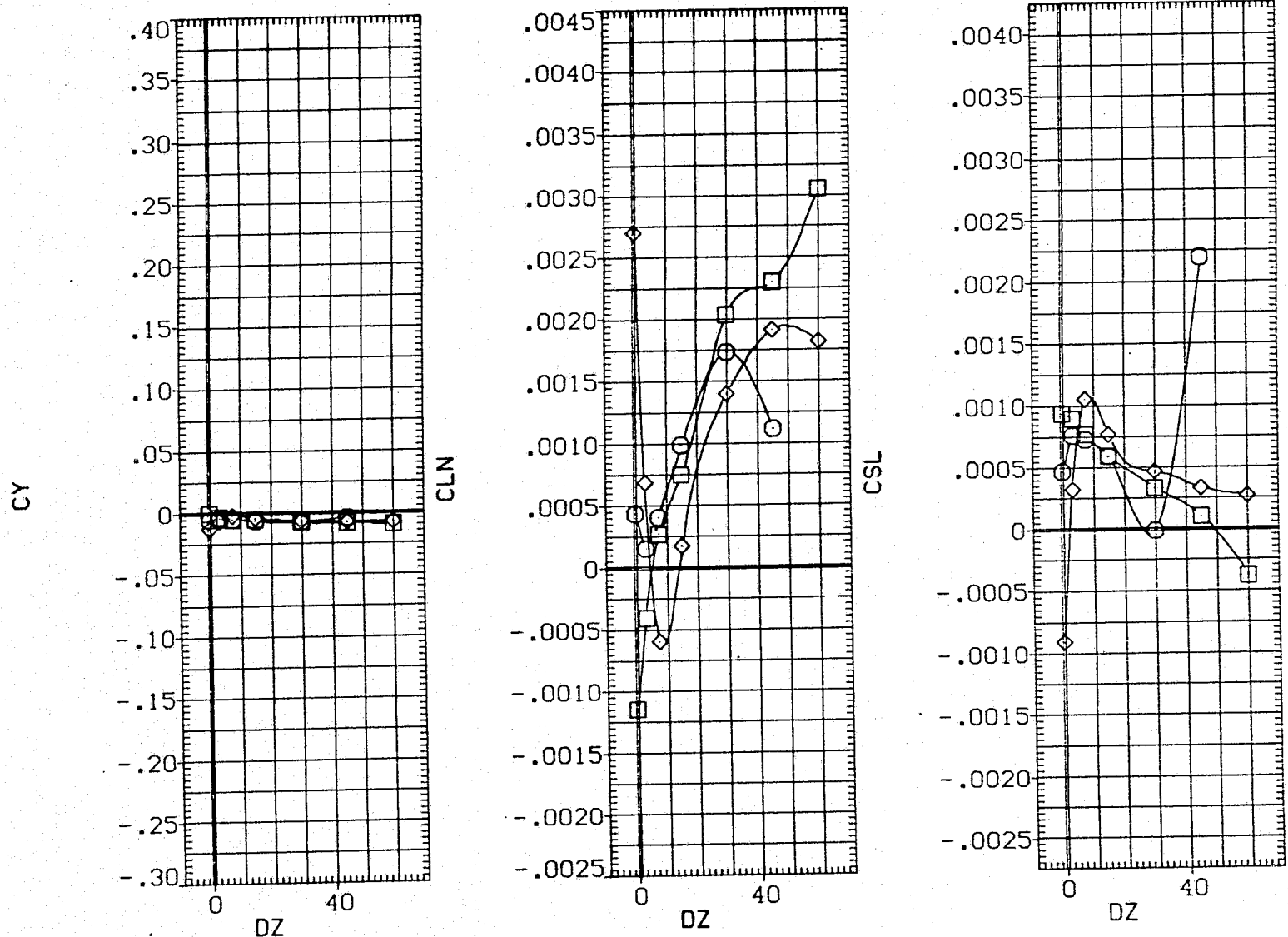


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000
10.000
14.000

ALPHAC

ELV-1B
ELEVON

PHI

DY

PARAMETRIC VALUES

.000

.000

5.000

.000

.000

.000

ELV-0B

MACH

DX

BETA0

.000

3.000

.600

21.000

.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

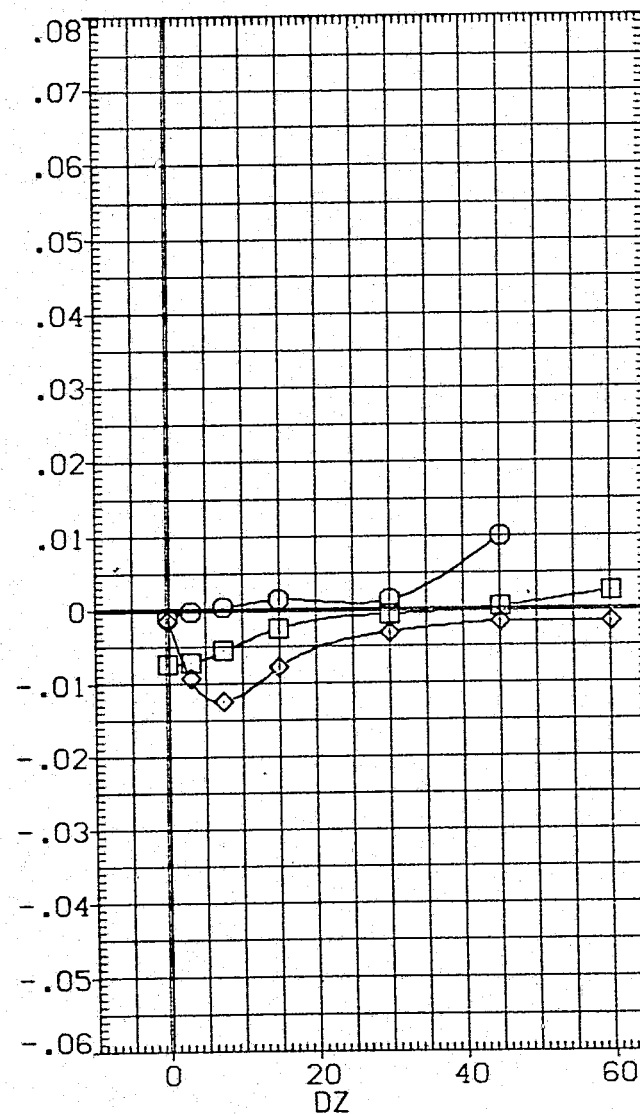
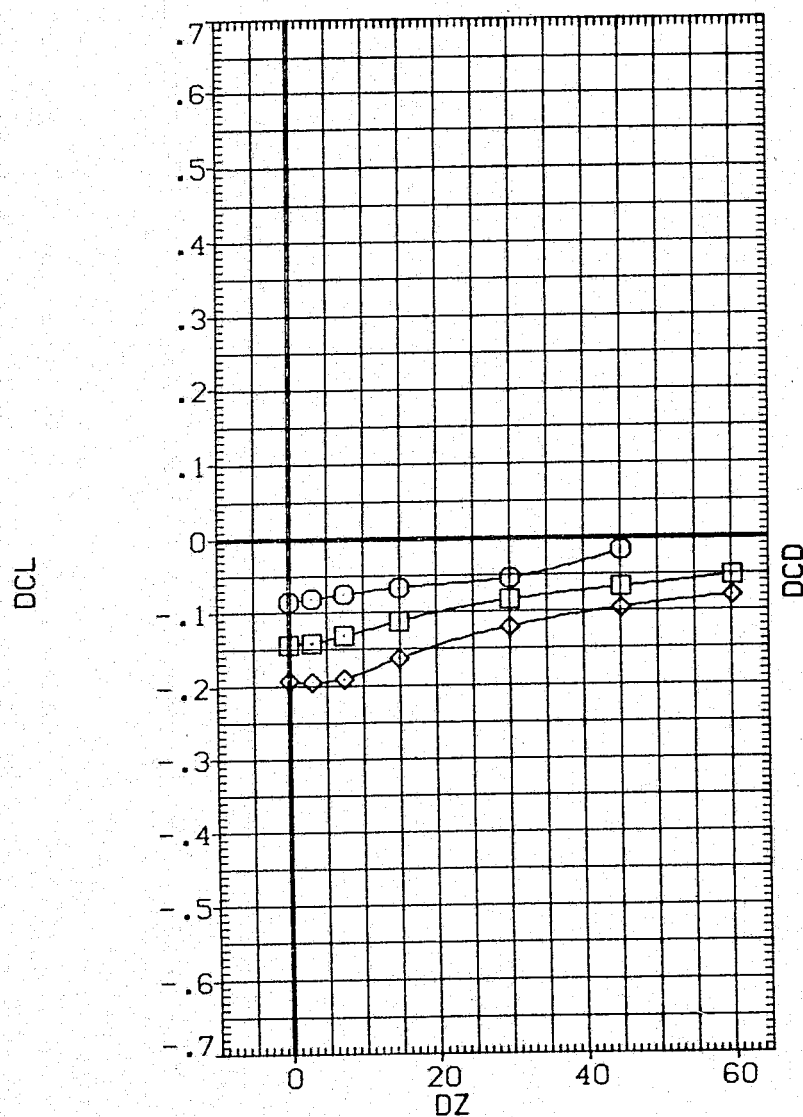


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES				REFERENCE INFORMATION		
	6.000	ALPHAC	.000	BETAC	.000		SREF	5500.0000	50.FT.
○	10.000	ELV-1B	.000	ELV-0B	3.000		LREF	327.7800	IN.
□	14.000	ELEVON	5.000	MACH	.600		BREF	2348.0400	IN.
◇		PHI	.000	DX	20.000		YMRP	1339.9000	IN.XC
		DY	.000	BETA0	.000		YMRP	.0000	IN.YC
							ZMRP	190.8000	IN.ZC
							SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

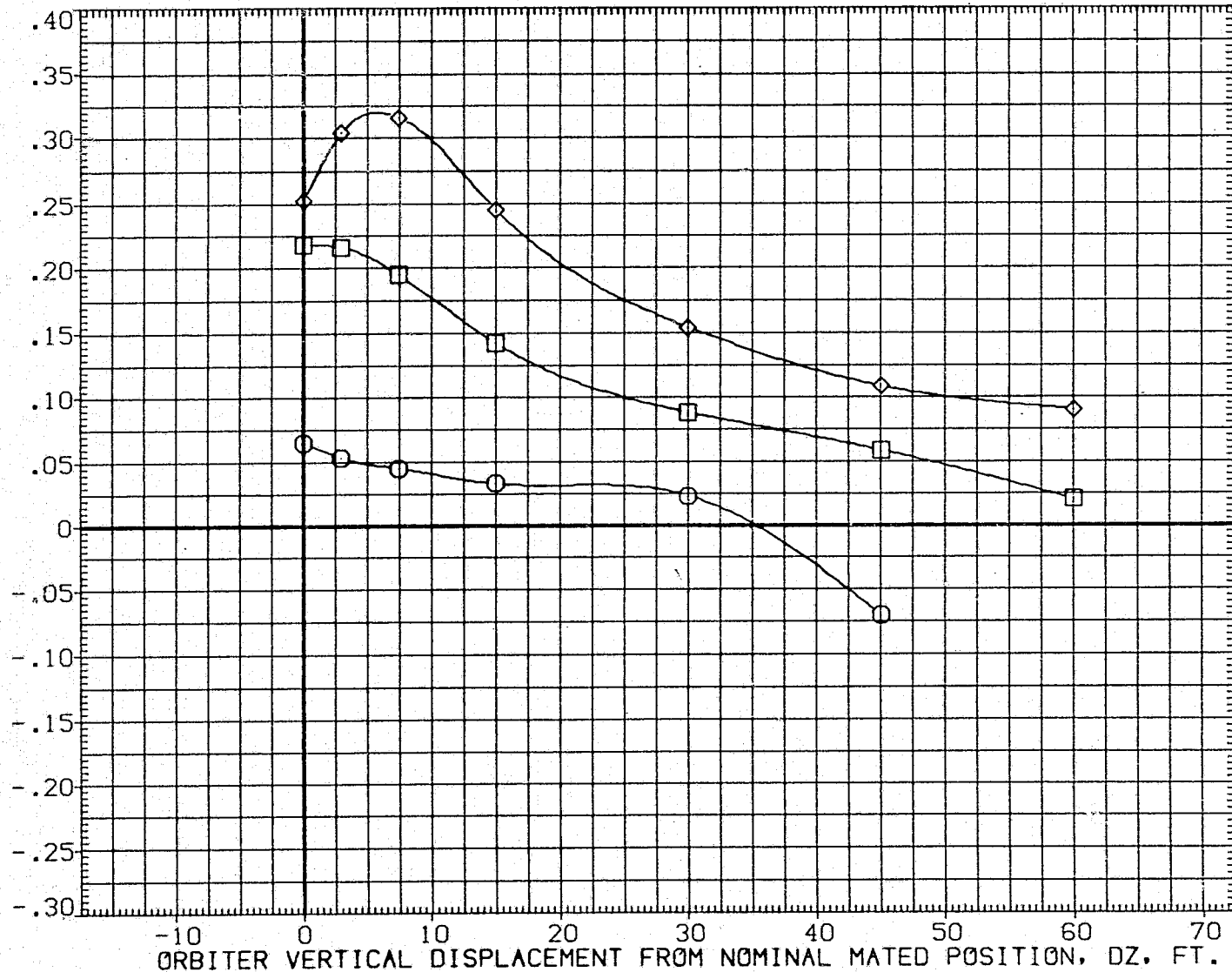


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	6.000	ALPHAC .000	BETAC .000
□	10.000	ELV-IB .000	ELV-OB 3.000
◇	14.000	ELEVON 5.000	MACH .600
		PHI .000	DX 20.000
		DY .000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

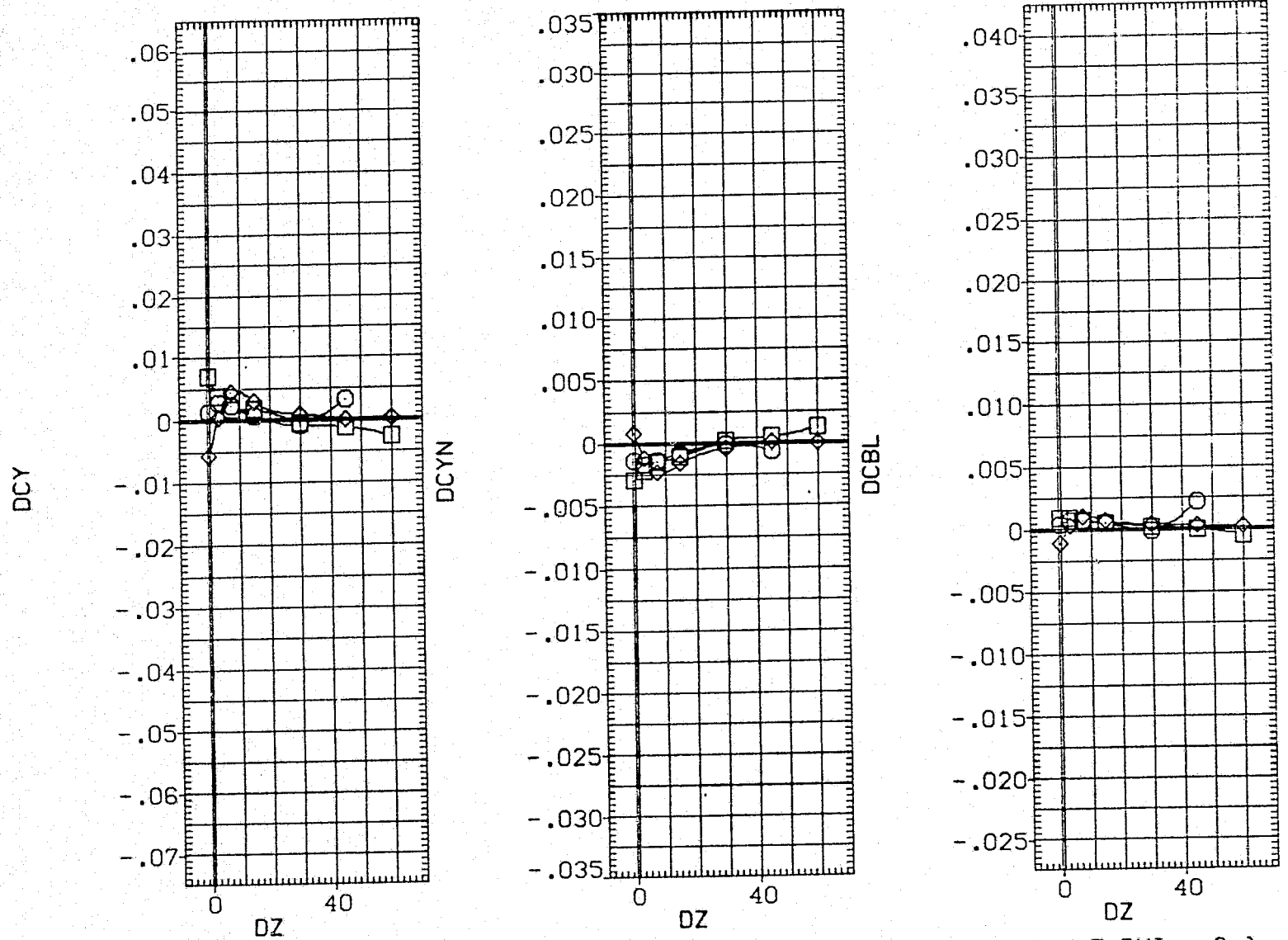


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC	
○	6.000	ALPHA0	.000	BETAC	.000
□	10.000	ELV-IB	.000	ELV-OB	3.000
◇	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	DX	20.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

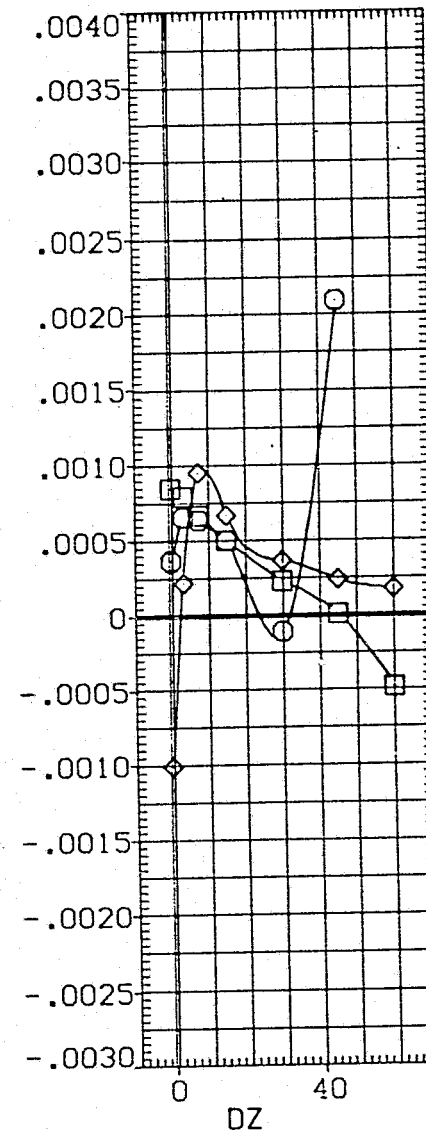
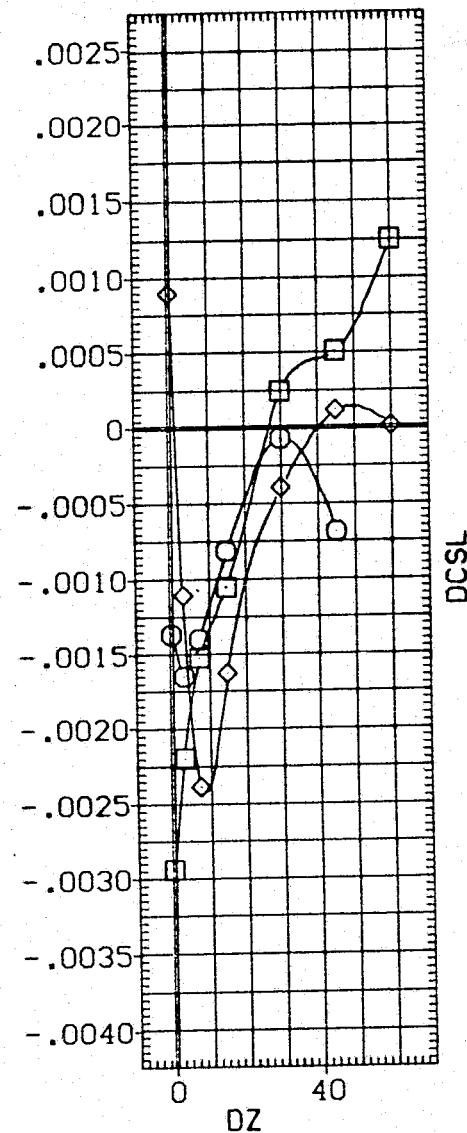
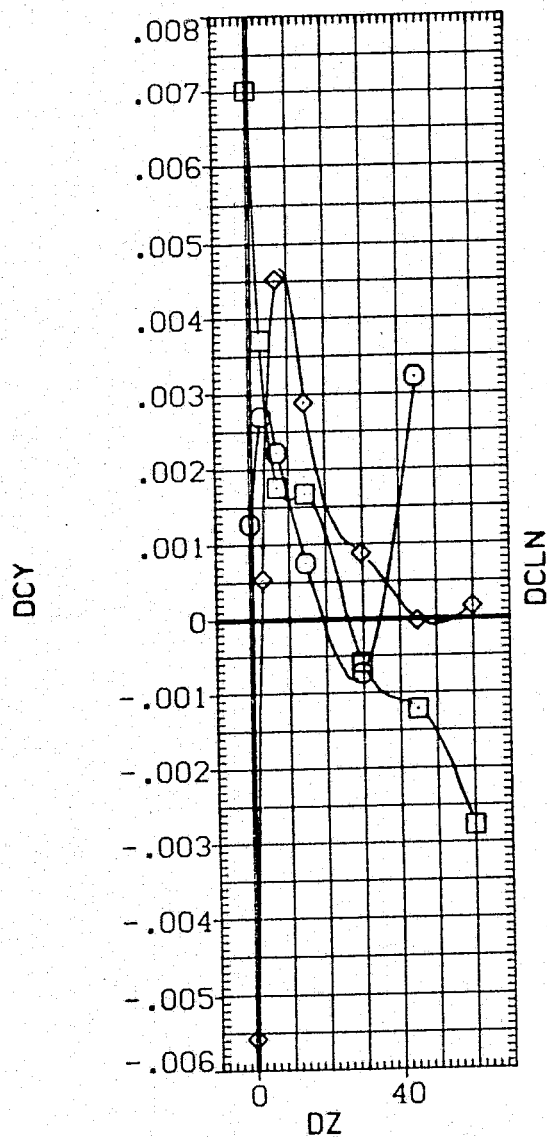


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	6.000	ELV-IB .000 ELV-OB 3.000
□	10.000	ELEVON 5.000 MACH .600
◇	14.000	BETA0 .000 PHI .000
		DY .000 BETAC .000
		DX 20.000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

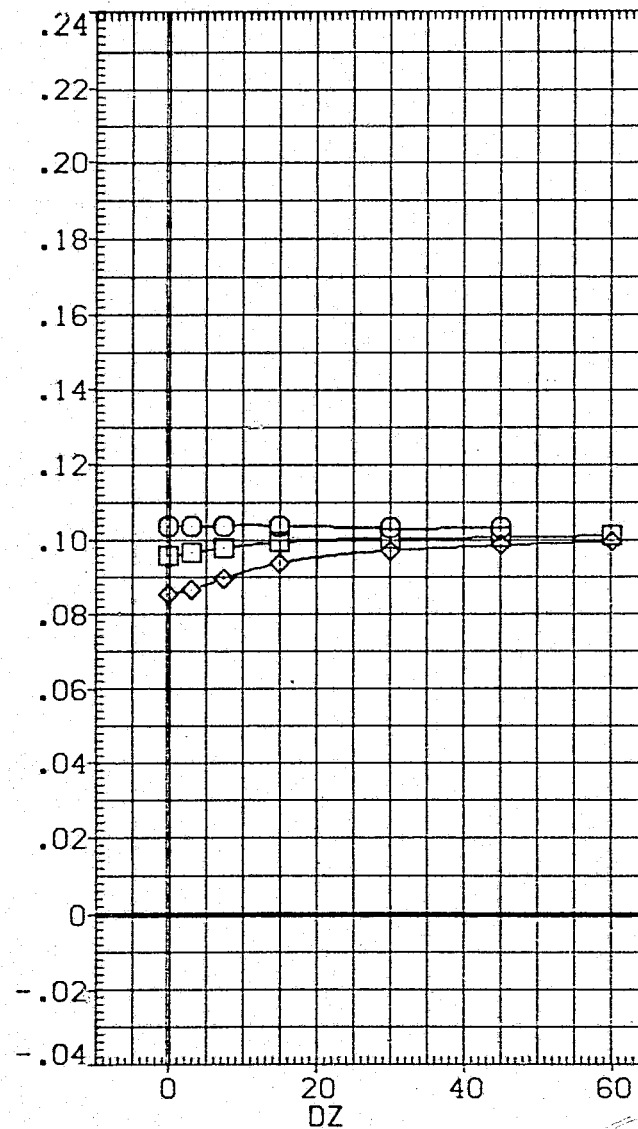
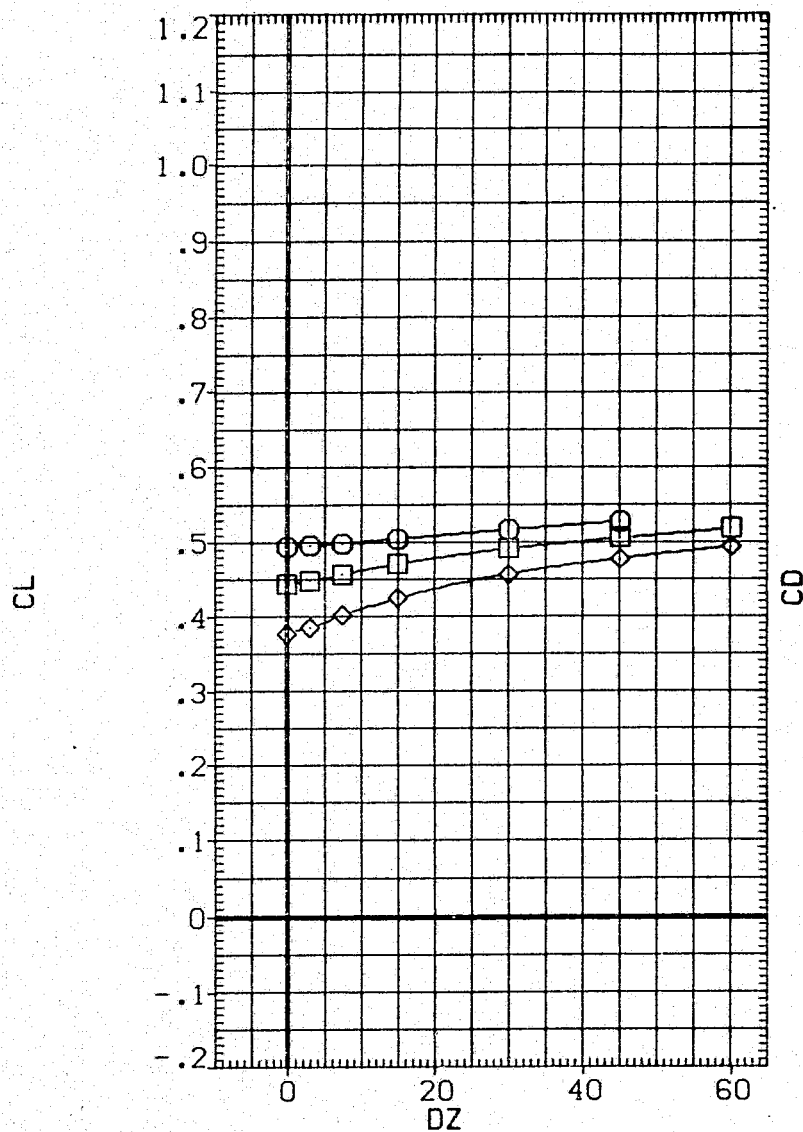


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	6.000	ELEVON	.000	MACH	3.000
□	10.000	BETA0	.000	PHI	.000
◇	14.000	DY	.000	BETAC	.000
		DX	20.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

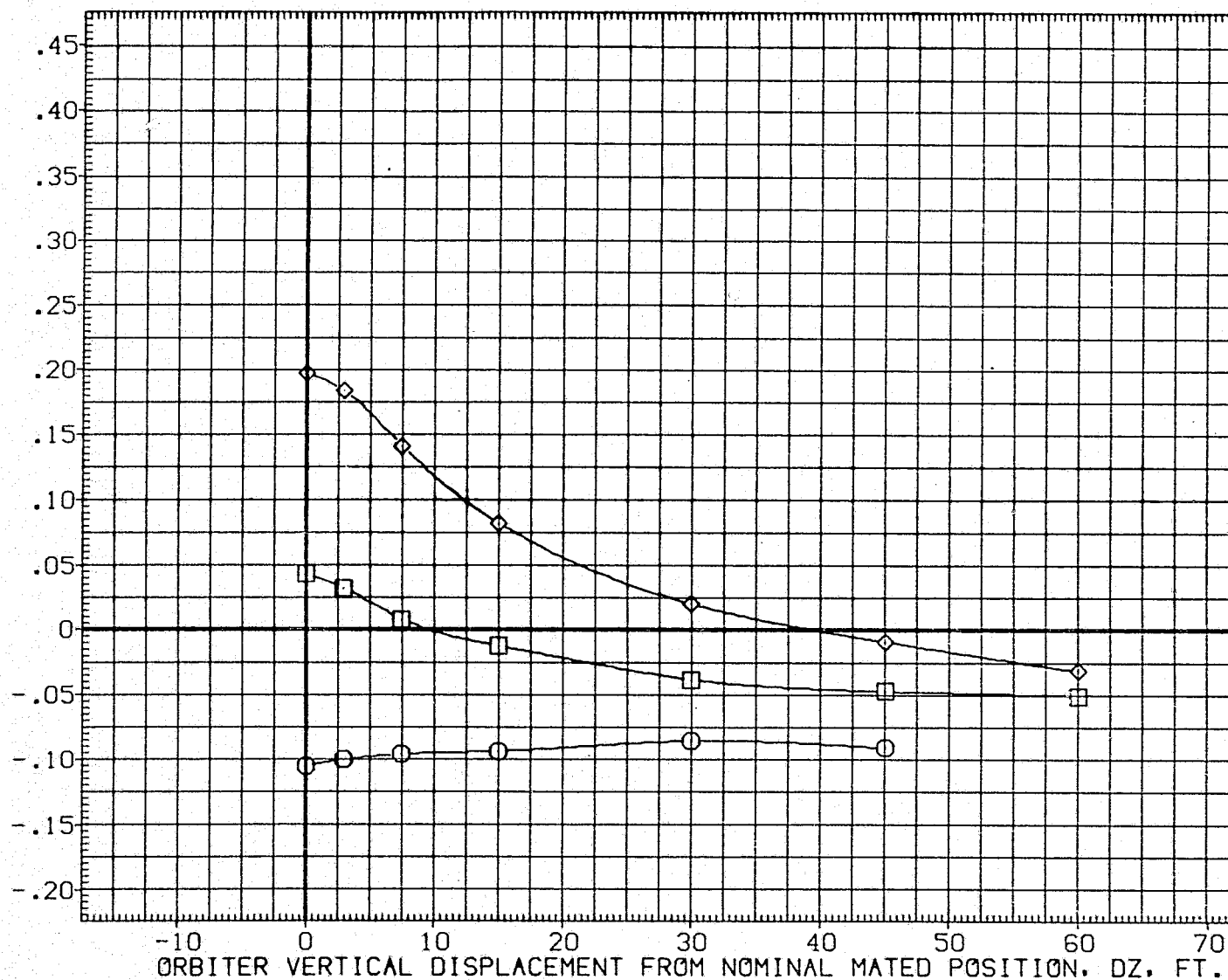


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB
○	6.000	.000		3.000
□	10.000	5.000		.600
◇	14.000	.000		.000
		DY	.000	.000
		DX	20.000	4.000
			ALPHAC	

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.6000	IN.ZC
SCALE	.0300	

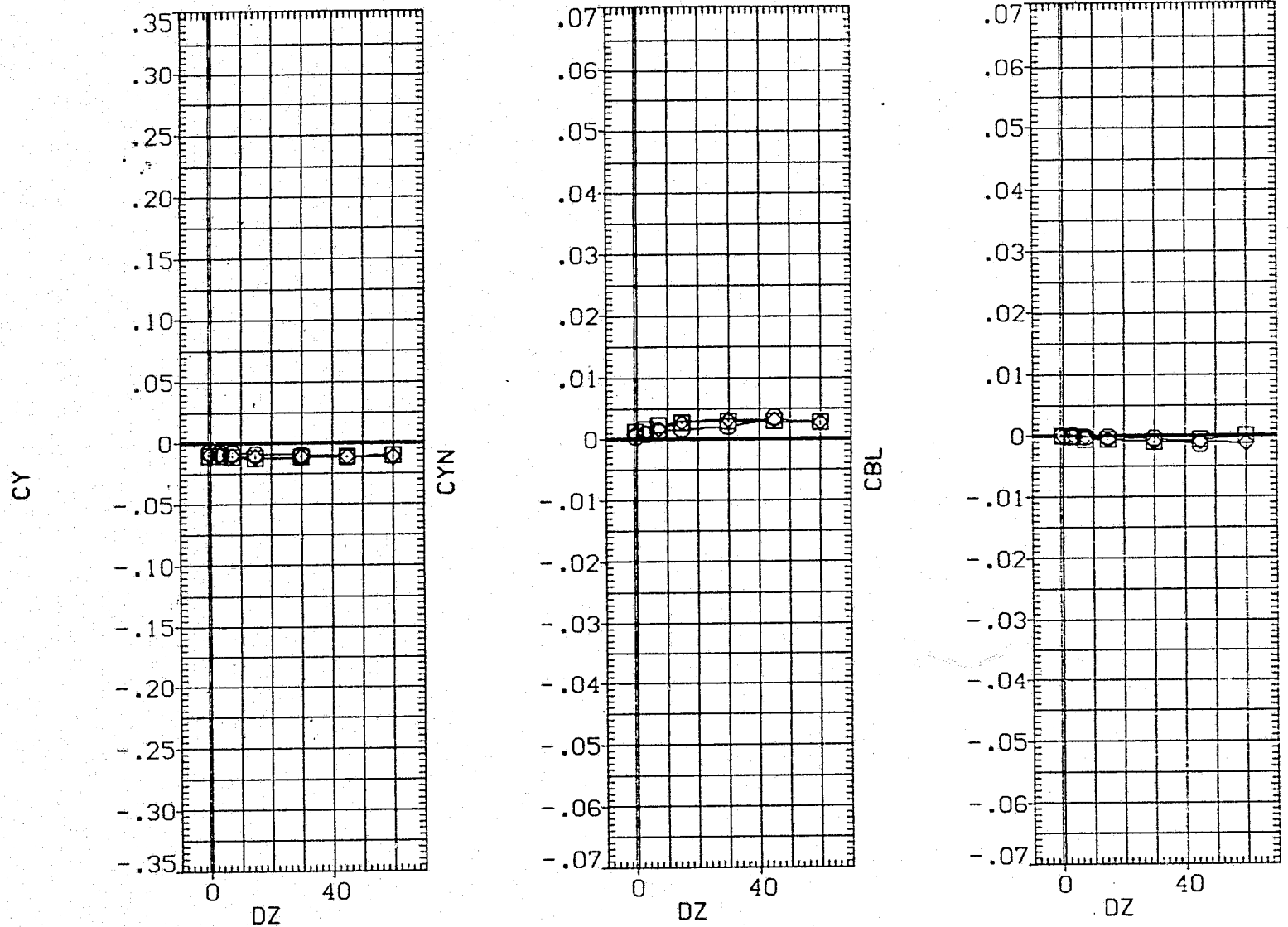


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	6.000	ELV-1B	.000	ELV-0B	3.000
□	10.000	ELEVON	5.000	MACH	.600
◇	14.000	BETA0	.000	PHI	.000
		DY	.000	BETAC	.000
		DX	20.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

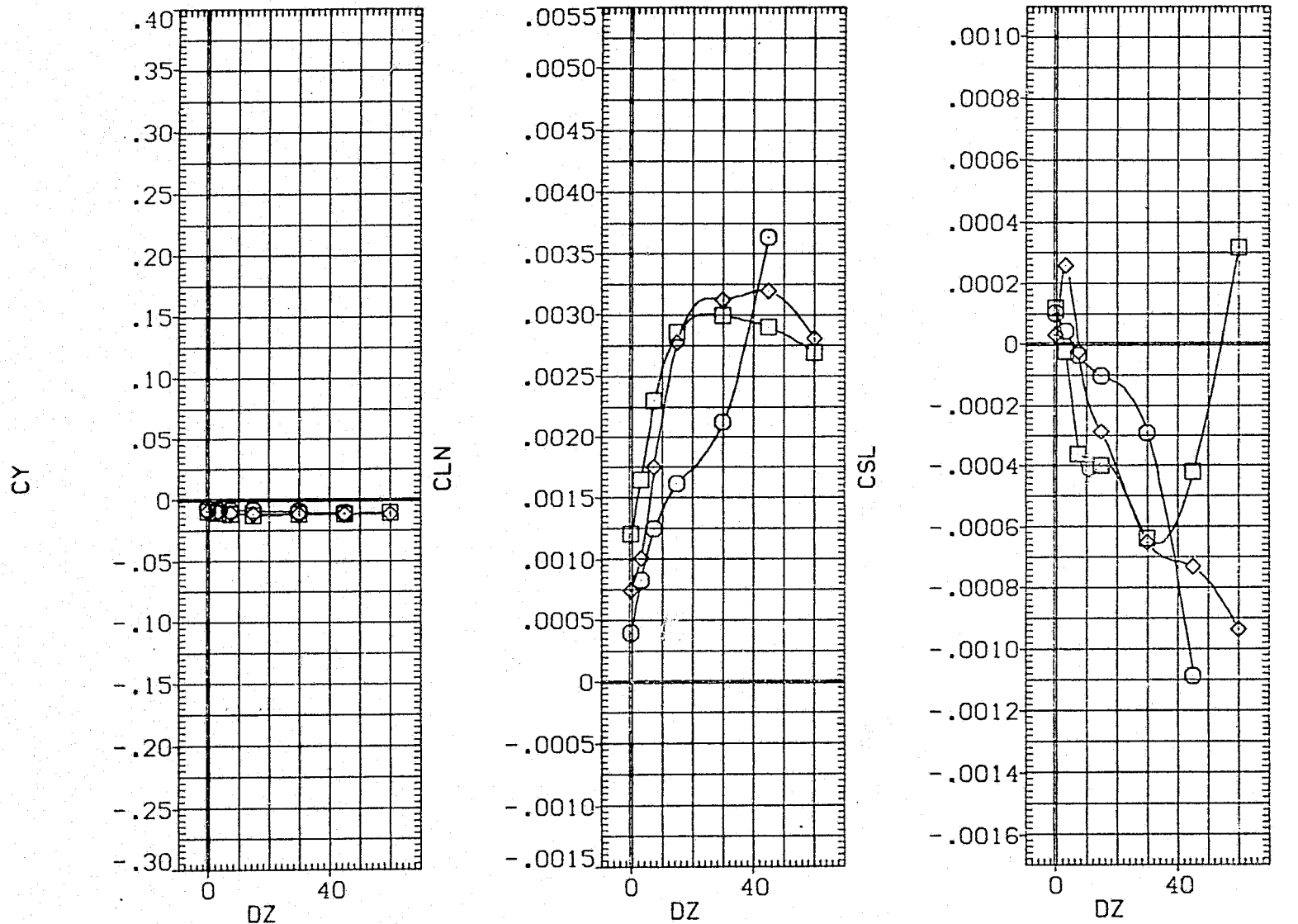


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

6.000
10.000
14.000

ALPHA0
ELV-1B
ELEVON
PHI
DY

PARAMETRIC VALUES

4.000 BETAC .000
.000 ELV-0B 3.000
5.000 MACH .600
.000 DX 20.000
.000 BETA0 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

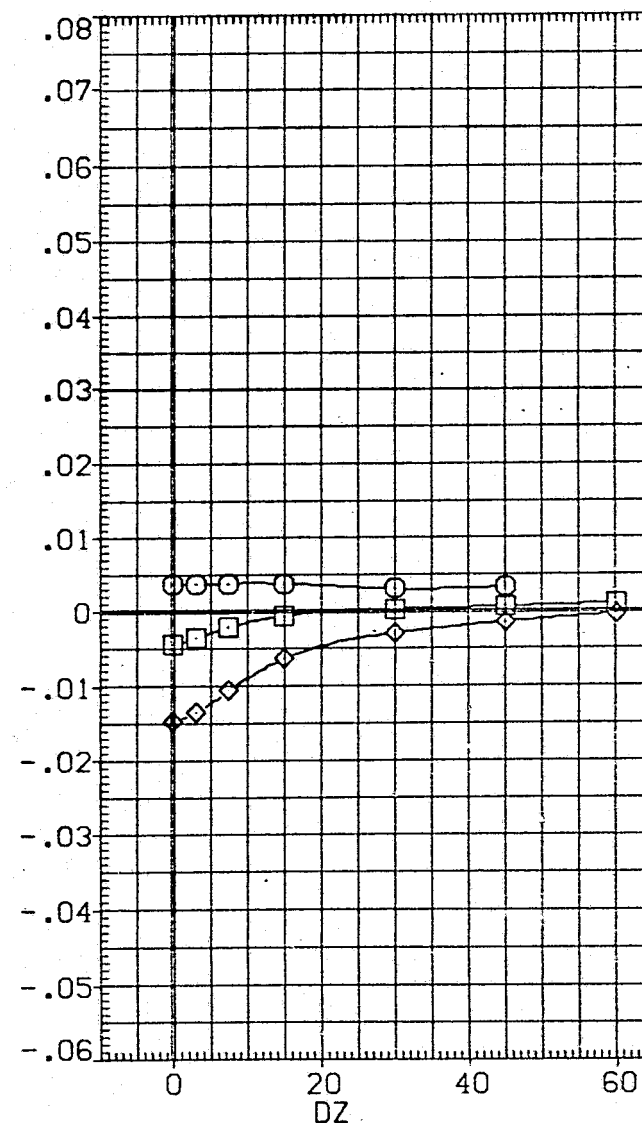
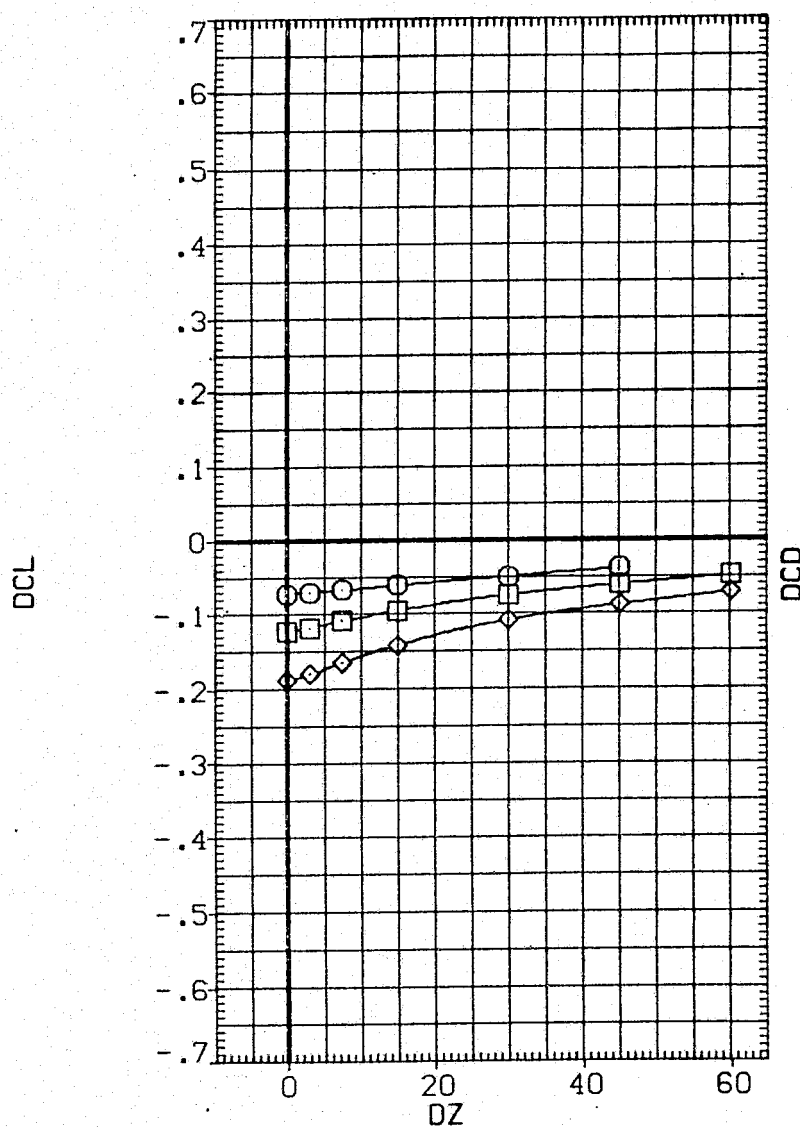


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

ALPHAC

10.000

ELV-IB

14.000

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

BETAC

.000

ELV-OB

.000

MACH

.600

OX

20.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

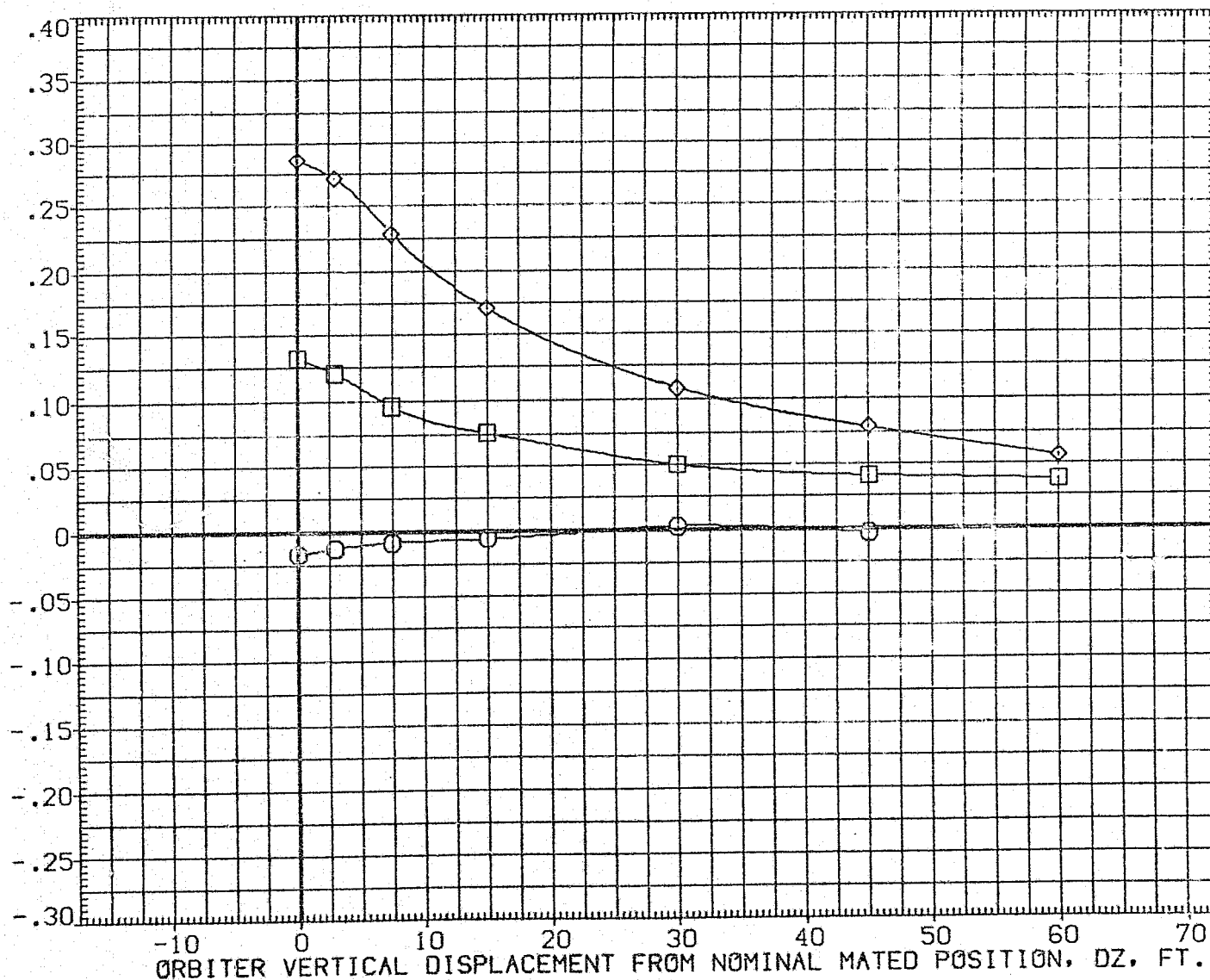


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

ALPHA0

10.000

14.000

ELEV-16

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

.000

.000

.000

BETAC

ELV-08

MACH

DX

BETA0

.000

3.000

.600

20.000

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2343.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

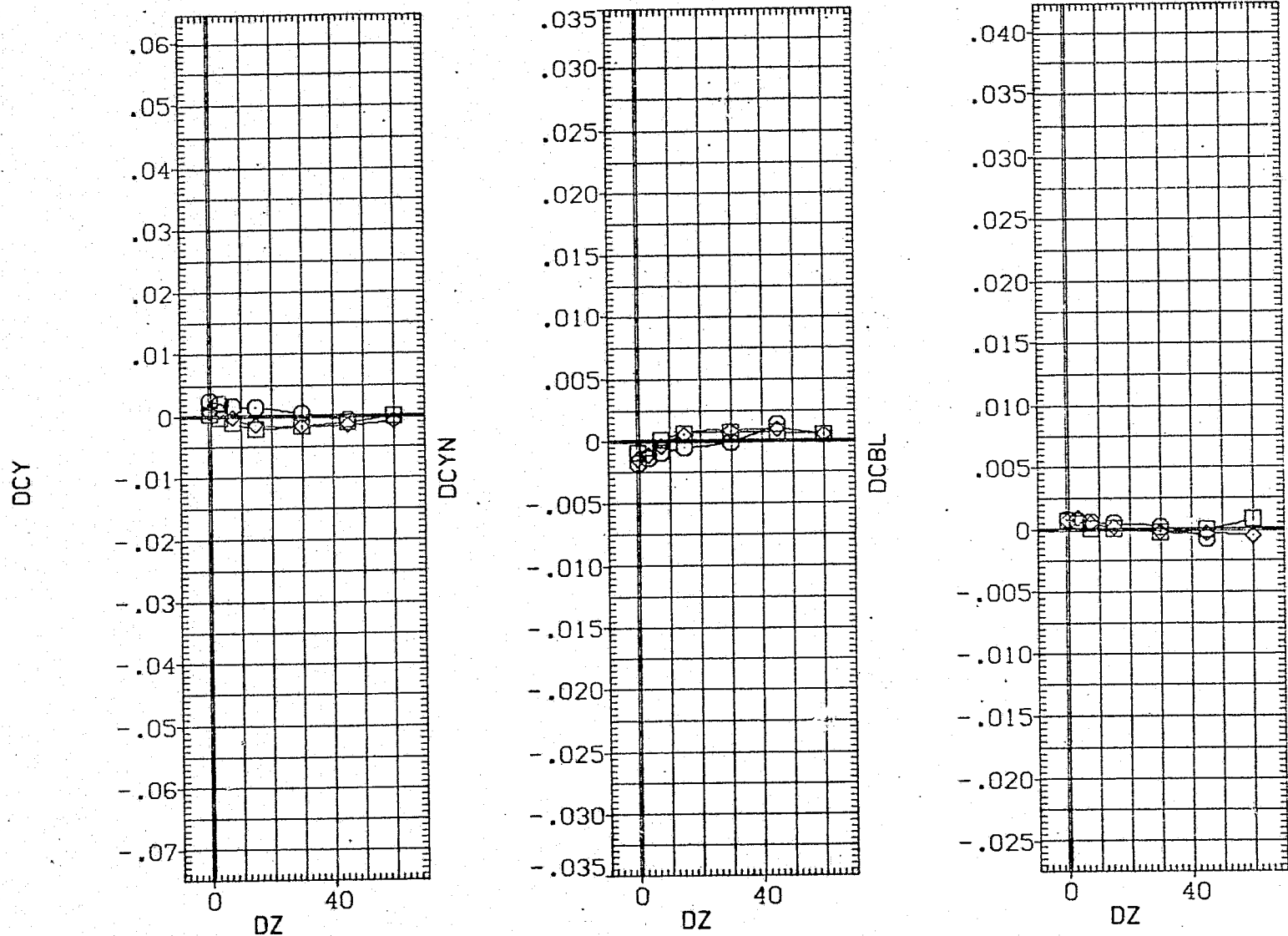


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	6.000	ALPHAC	4.000	BETAC	.000
□	10.000	ELV-IB	.000	ELV-OB	3.000
◇	14.000	ELEVON	5.000	MACH	.600
		PHI	.070	DX	20.000
		DY	.007	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

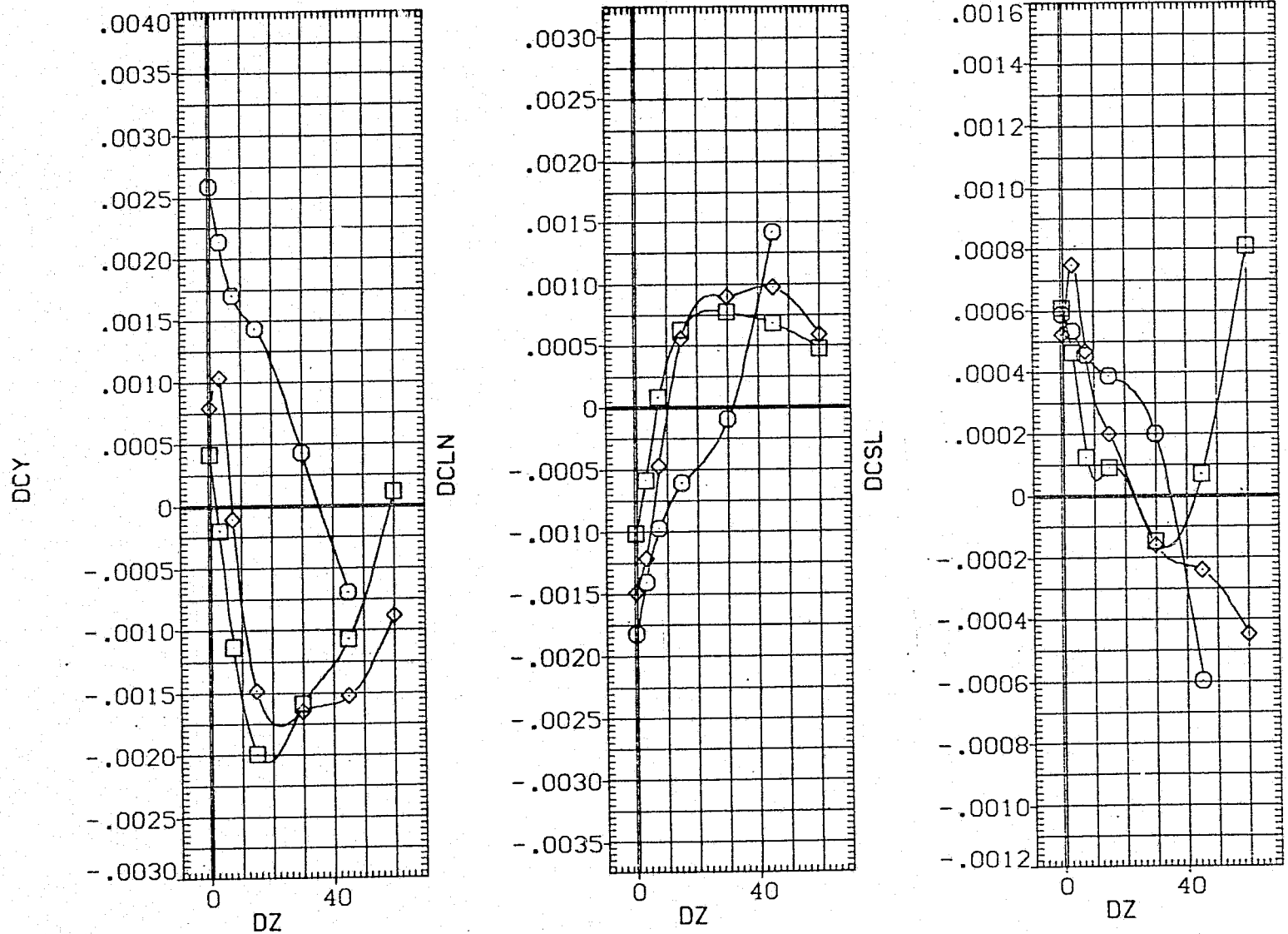


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

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CARRIER DATA(16N057)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	6.000	ELV-IB	.000	ELV-OB	3.000
□	10.000	ELEVON	5.000	MACH	.600
◇	14.000	BETA0	.000	PHI	.000
		DY	.000	BETAC	.000
		DX	20.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

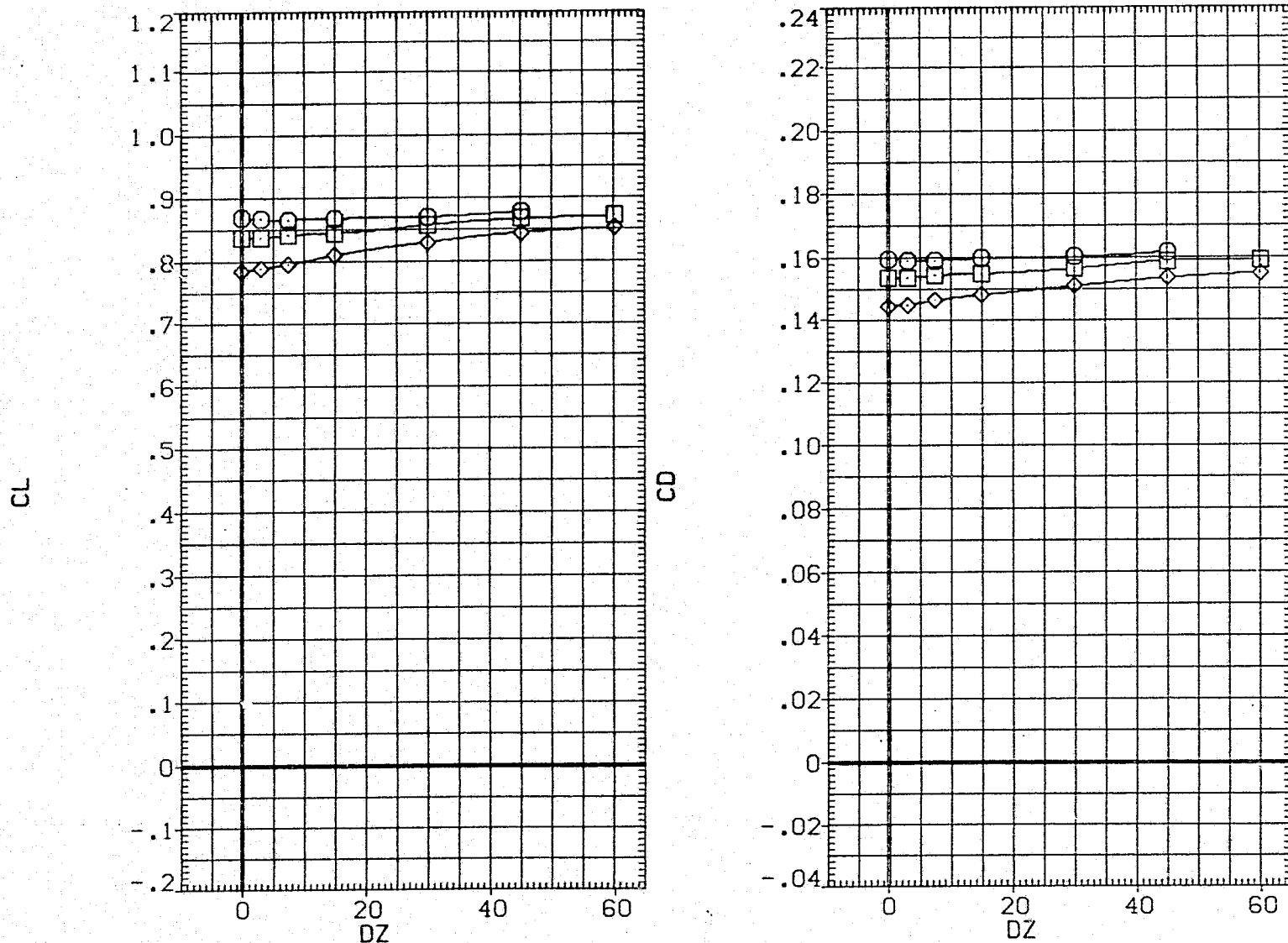


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	6.000	ELV-IB .000 ELV-OB 3.000
□	10.000	ELEVON 5.000 MACH .600
◇	14.000	BETA0 .000 PHI .000
		DY .000 BETAC .000
		DX 20.000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

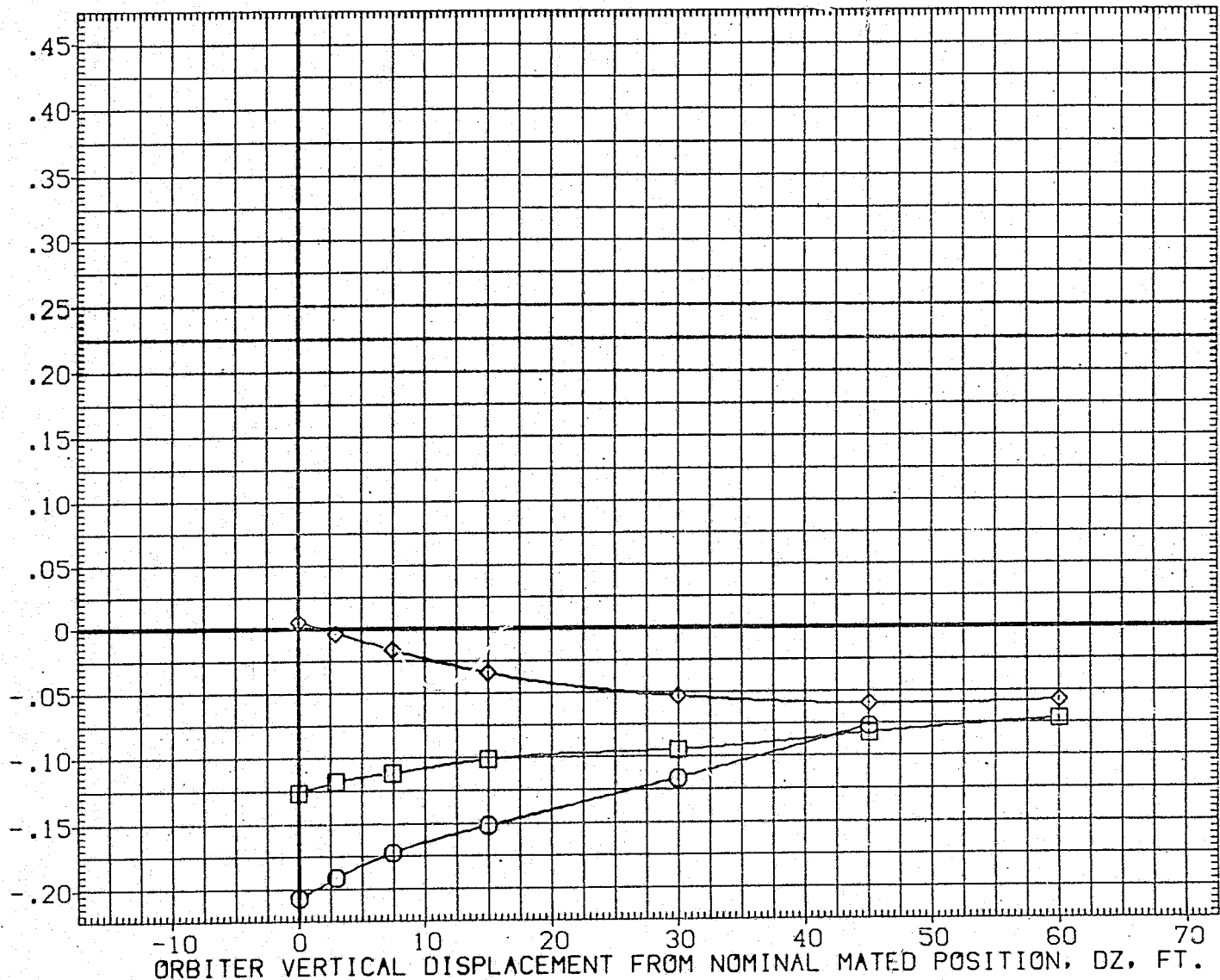


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-18	PARAMETRIC VALUES	ELV-08	VALUES
○	6.000	ELV-18	.000	ELV-08	3.000
□	10.000	ELEVON	5.000	MACH	.600
◇	14.000	BETA0	.000	PHI	.000
		DY	.000	BETAC	.000
		DX	20.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.8000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

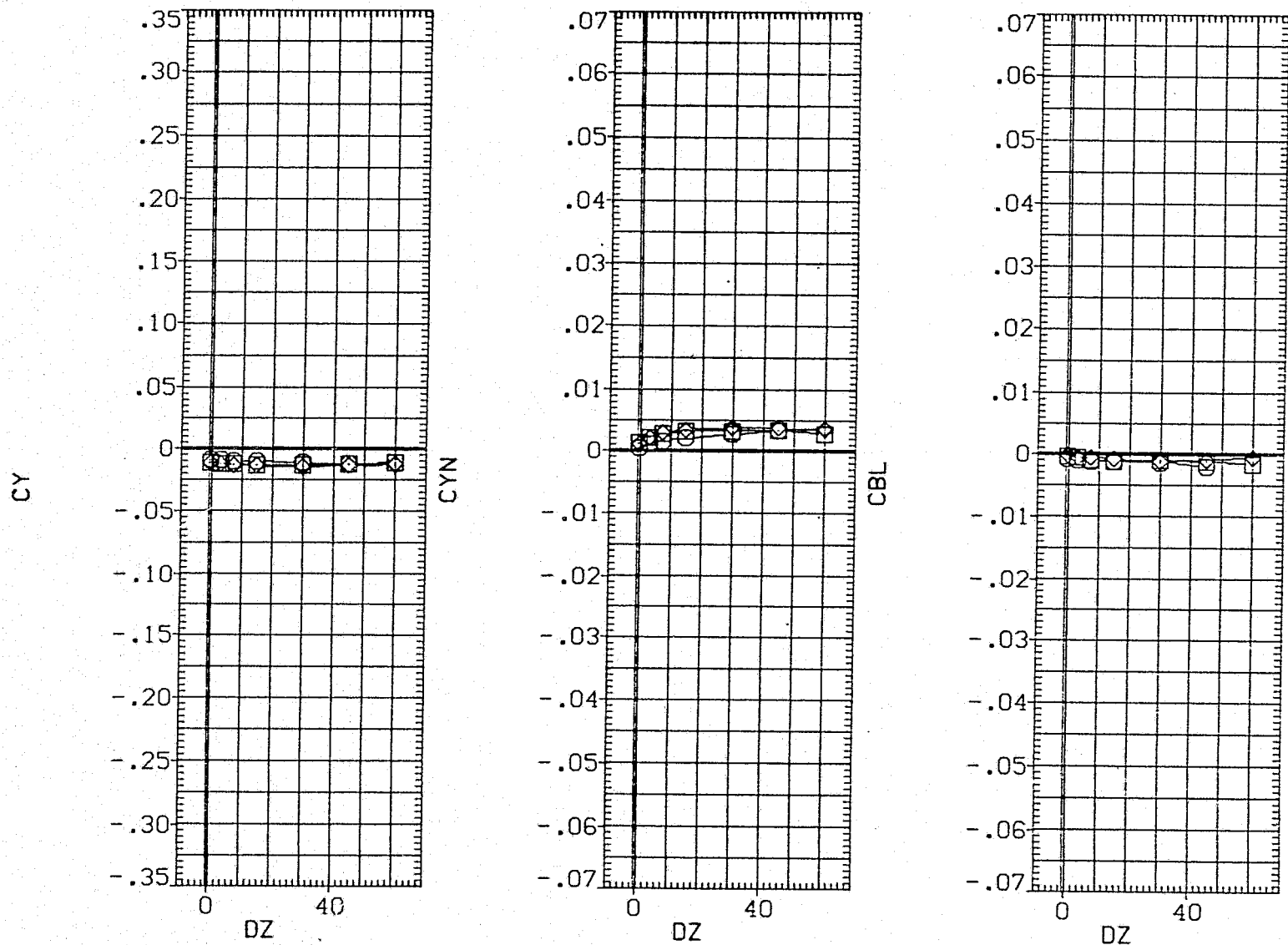


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	6.000	.000	MACH	3.000
□	10.000	5.000	PHI	.600
◇	14.000	.000	BETAC	.000
		20.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

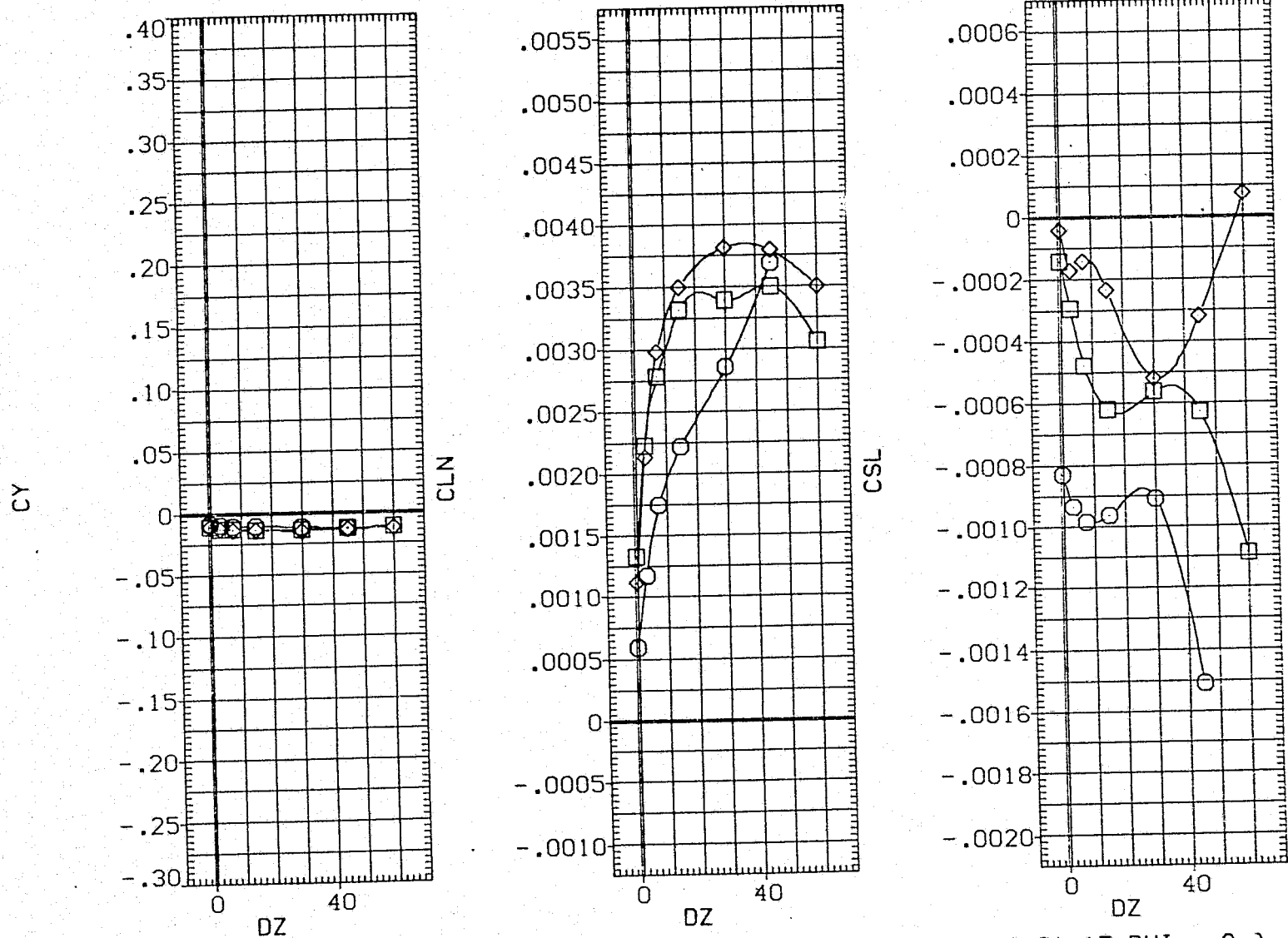


FIG. 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

ALPHAC

10.000

14.000

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

.000

.000

.000

BETAC

ELV-08

MACH

DX

BETA0

.000

3.000

.600

20.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.XC

IN.YC

IN.ZC

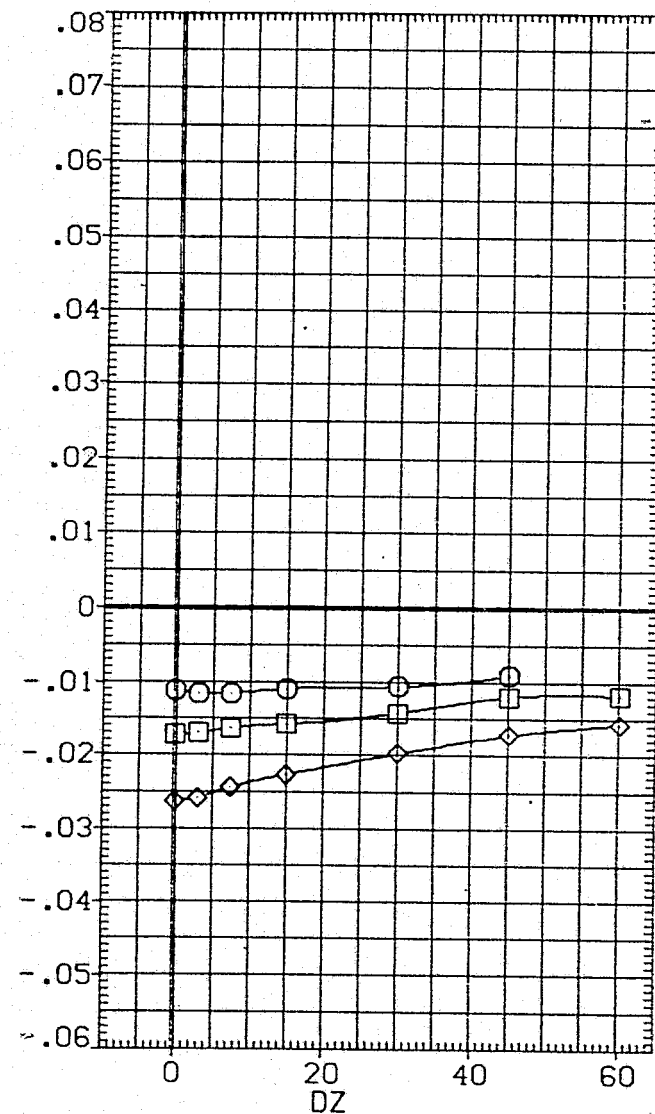
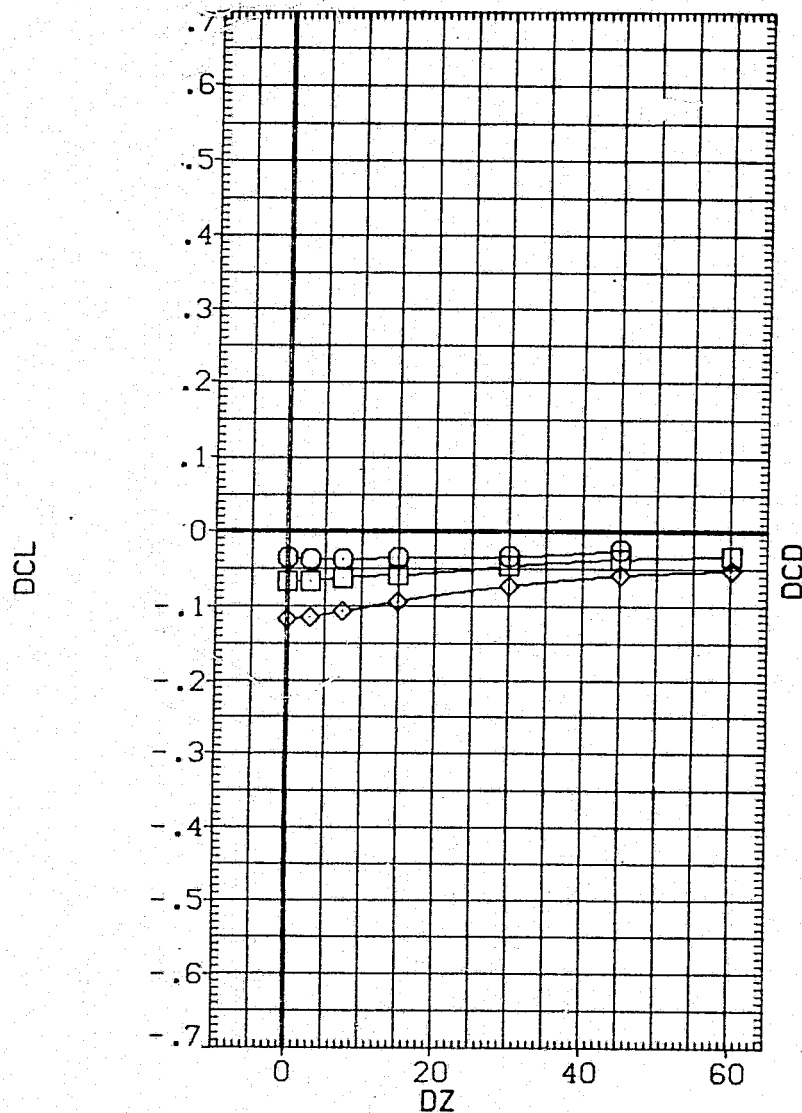


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□
◇

ALPHA0

6.000

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

.000

.000

BETAC

ELV-0B

MACH

DX

BETA0

.000

3.000

.600

20.000

.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

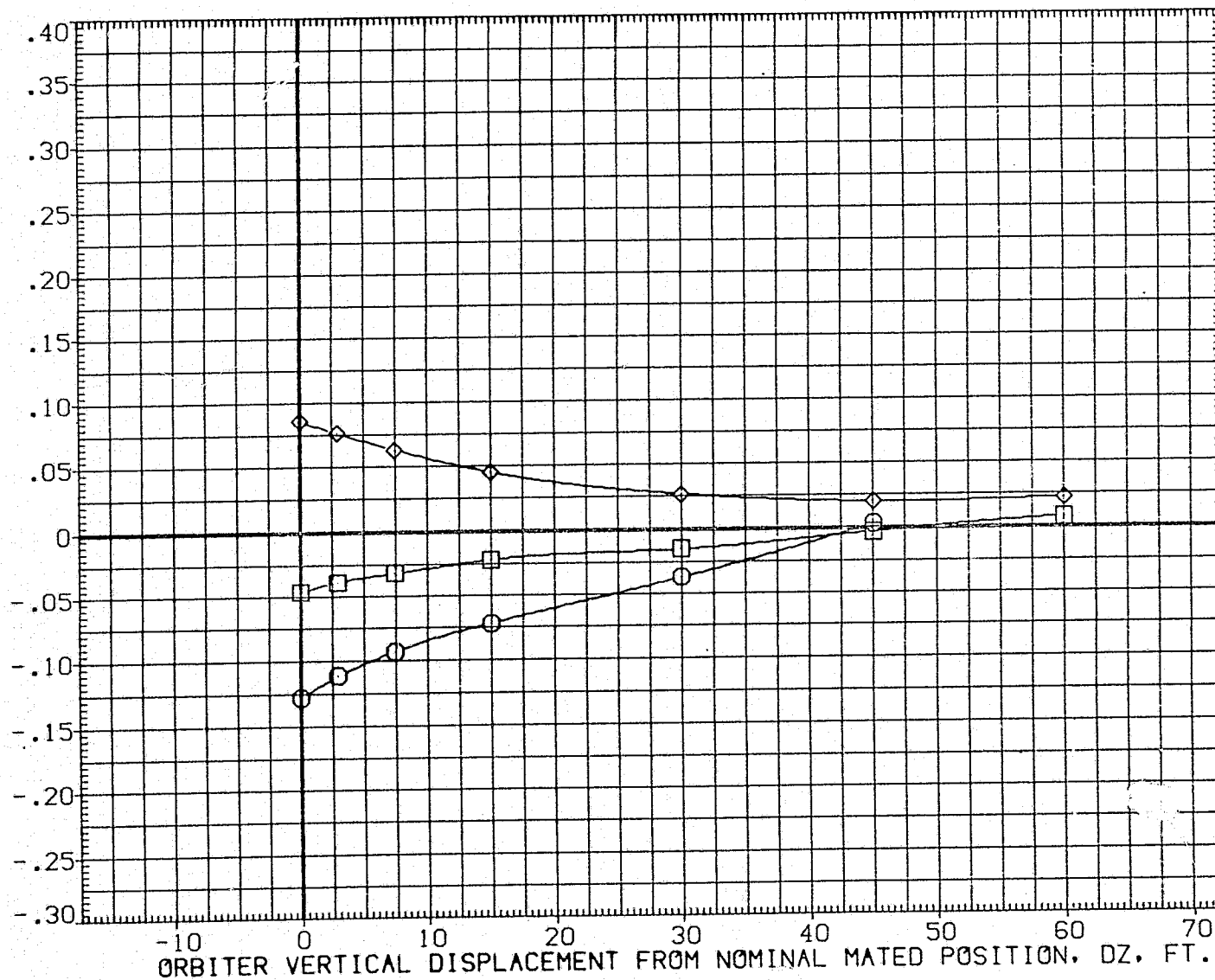


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHAD	PARAMETRIC VALUES
○	6.000	ALPHAC 8.000 BETAC .000
□	10.000	ELV-IB .000 ELV-OB 3.000
◇	14.000	ELEVON 5.000 MACH .600
		PHI .000 DX 20.000
		DY .000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

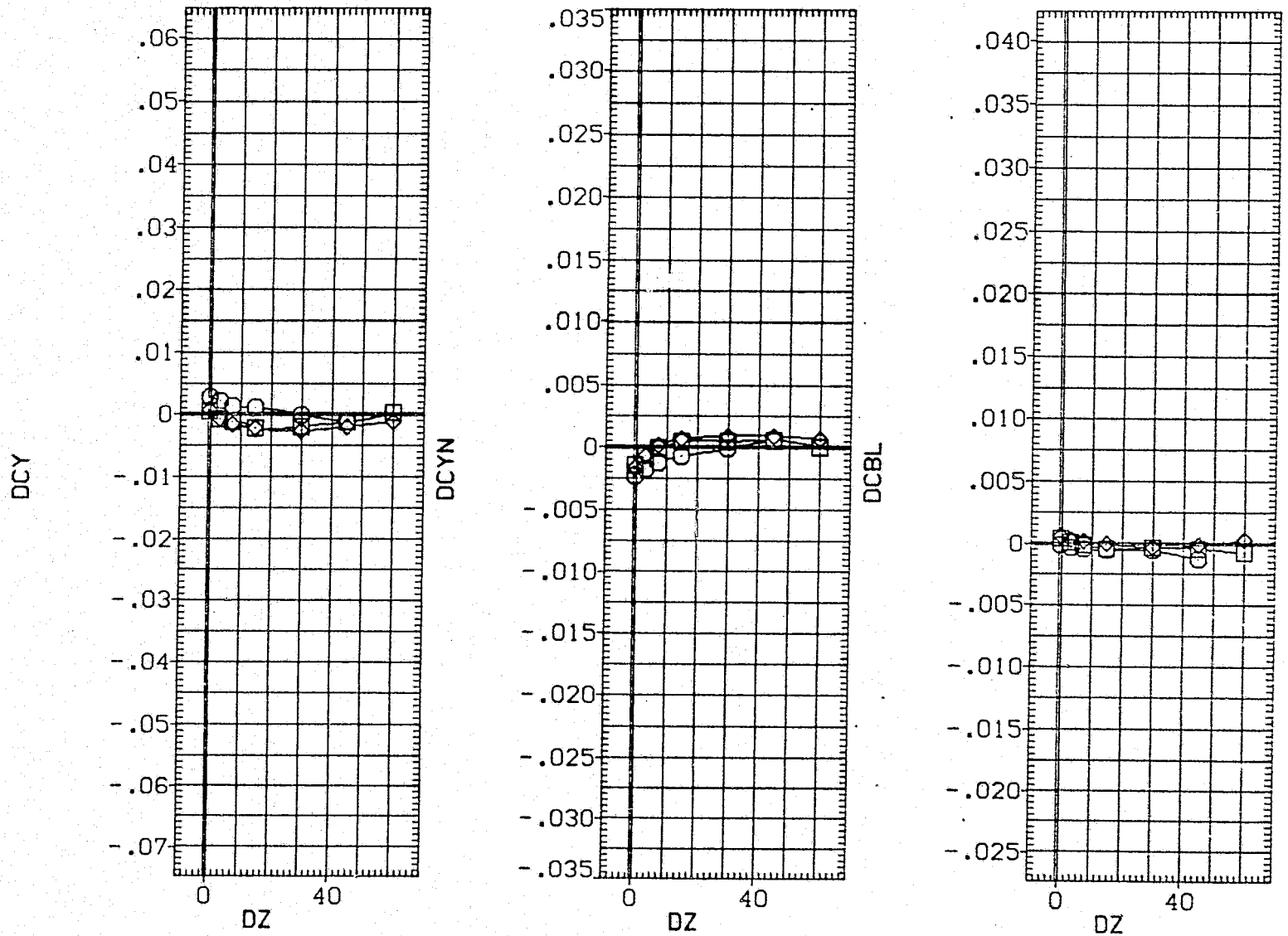


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	
○	6.000	8.000	BETAC	.000
□	10.000	.000	ELV-0B	3.000
◇	14.000	5.000	MACH	.600
		.000	DX	20.000
		.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

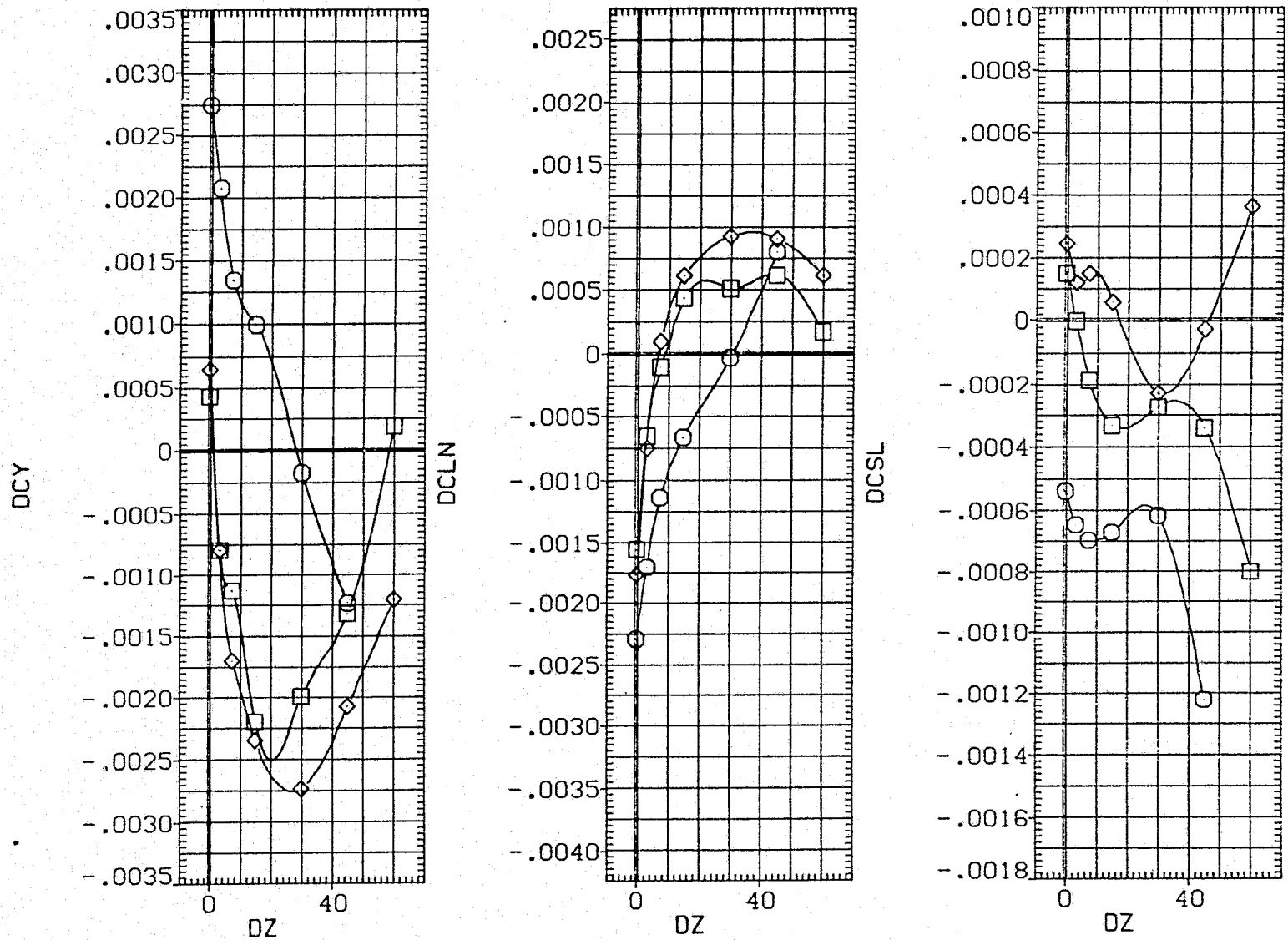


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

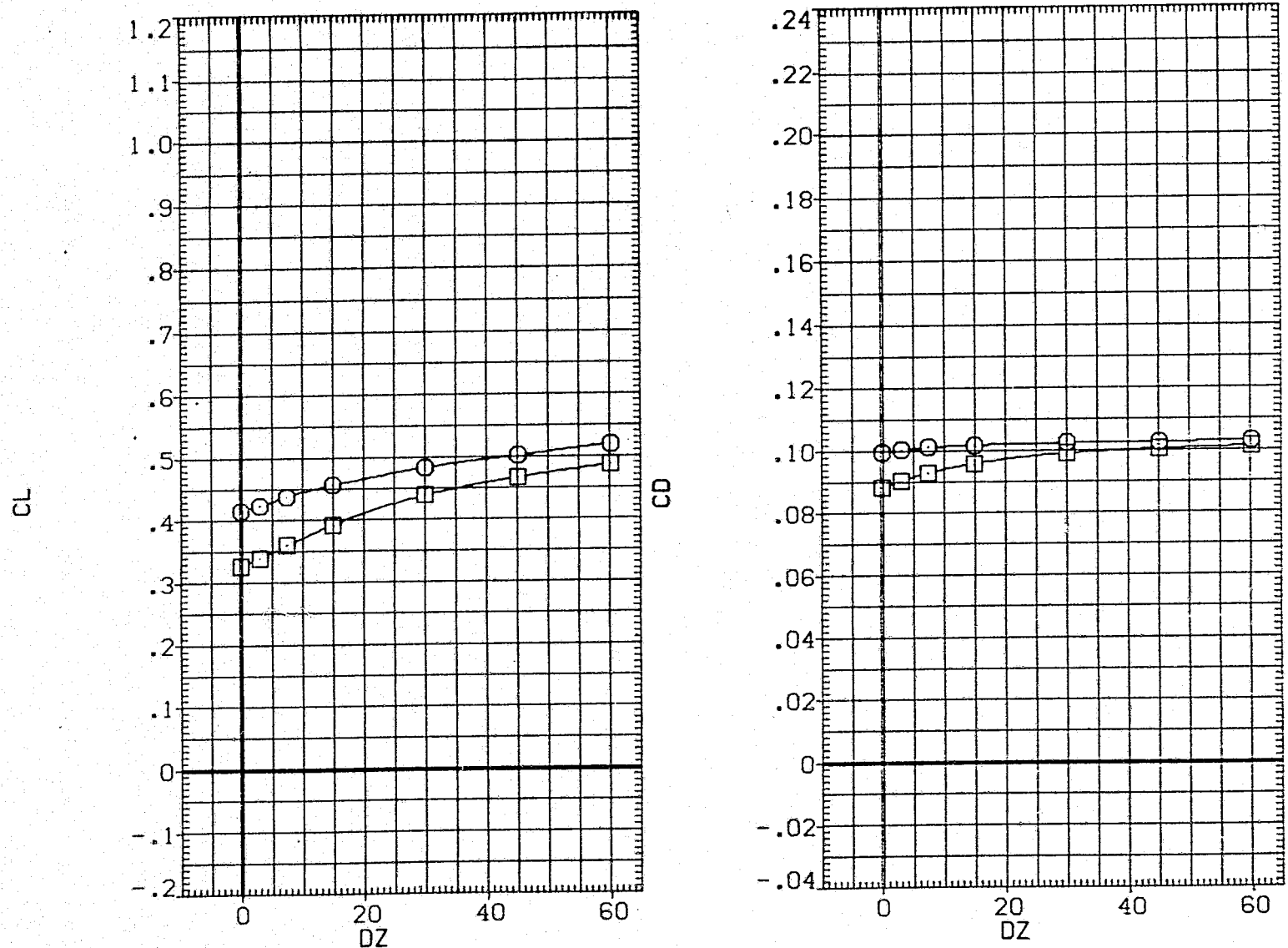


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000
14.000

ELV-1B

ELEVON

BETA0

PHI

OX

PARAMETRIC VALUES

.000

5.000

.000

.000

.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

.000

10.000

4.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	1348.0400	IN.
XMRP	1339.9500	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

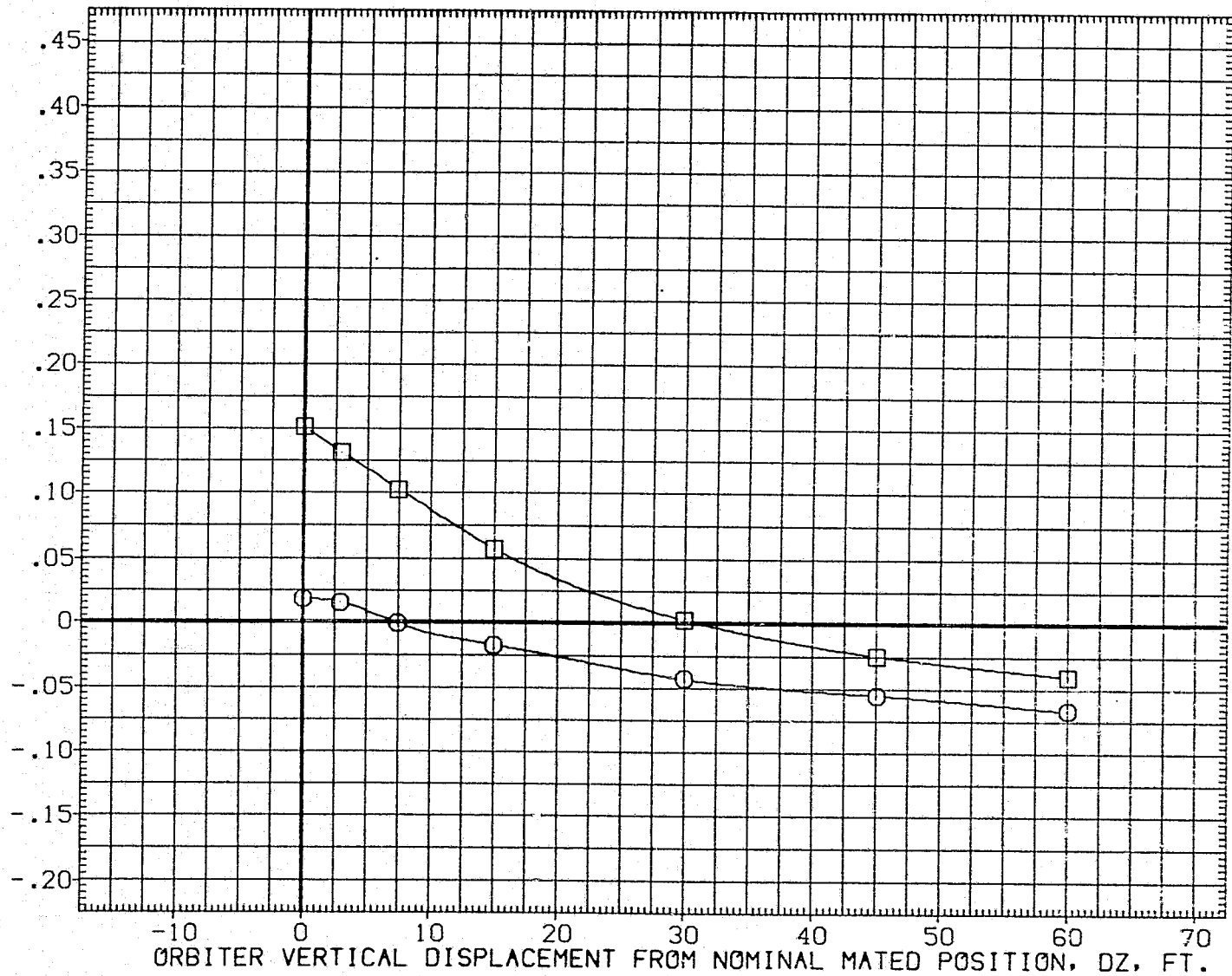


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	ELEVON	.000	3.000
□	14.000	BETA0	5.000	.600
		PHI	.000	.000
		DX	.000	10.000
			ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7803	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

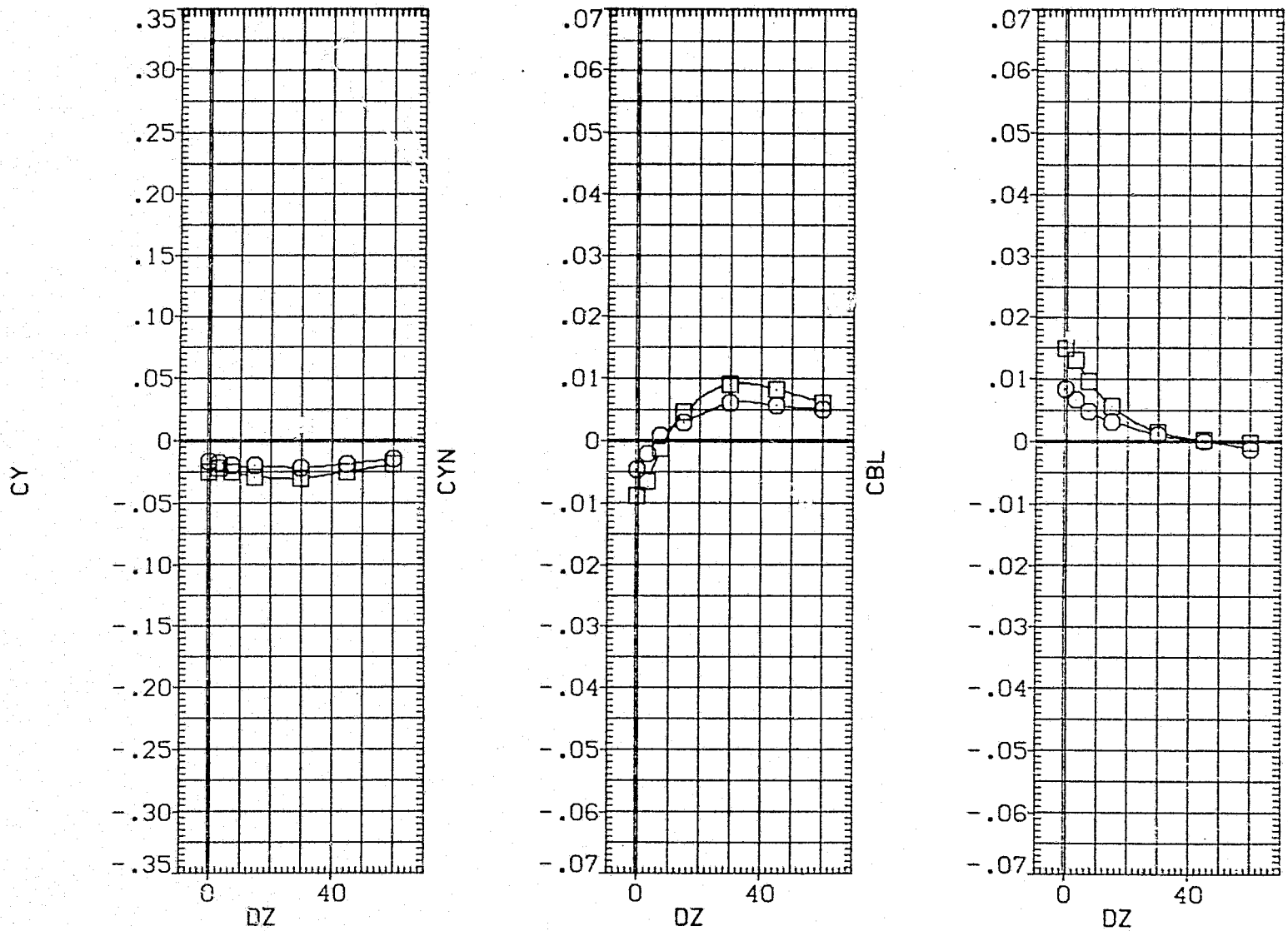


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-18 .000 ELV-08 3.000
□	14.000	ELEV0N 5.000 MACH .600
		BETA0 .000 BETAC .000
		PHI .000 DY 10.000
		DX .000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

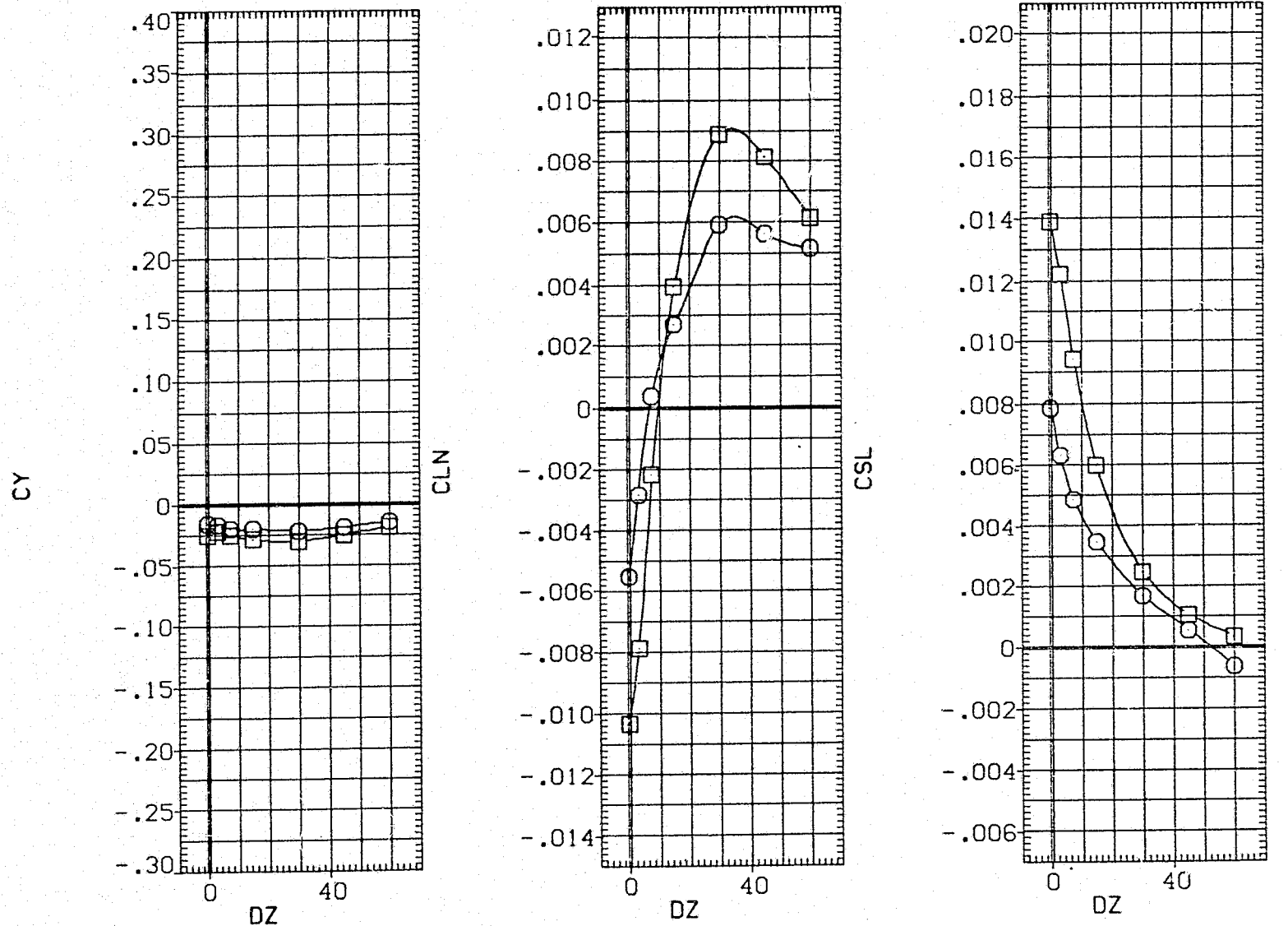


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

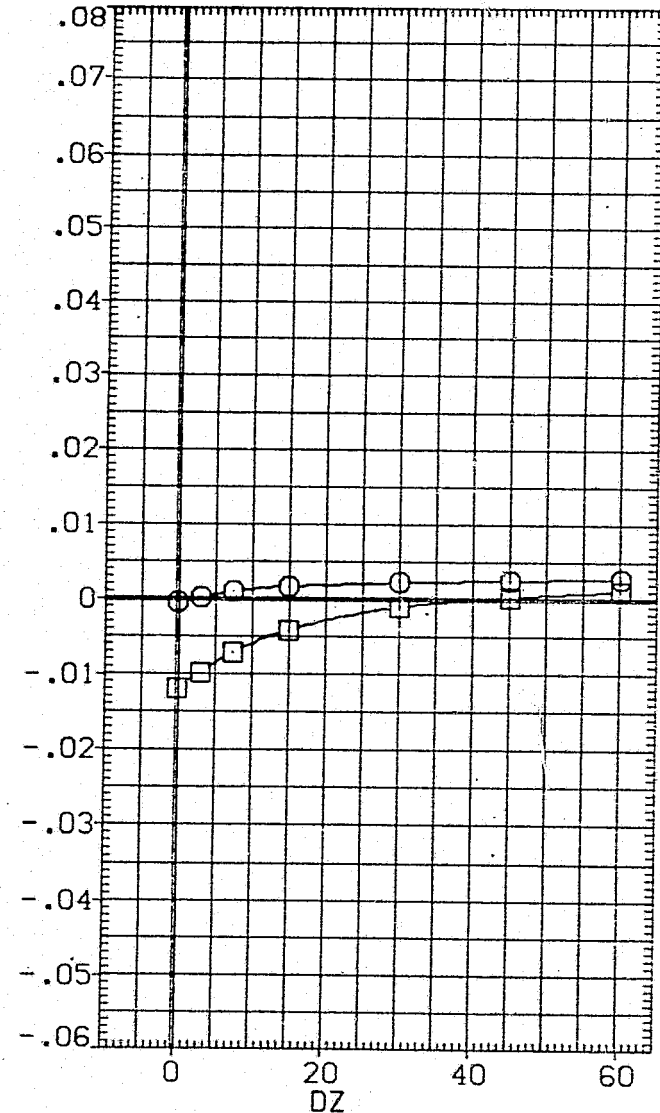
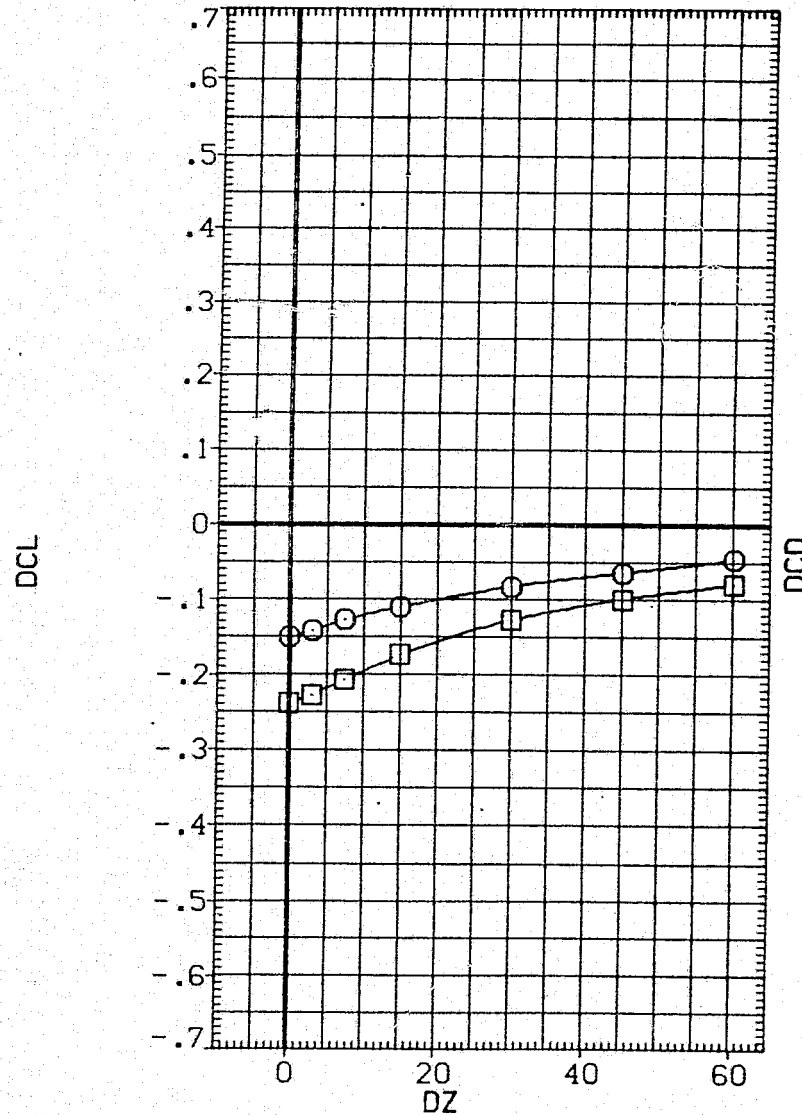


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

□ ○

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

.000

10.000

BETAC

ELV-0B

MACH

DX

BETA0

.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

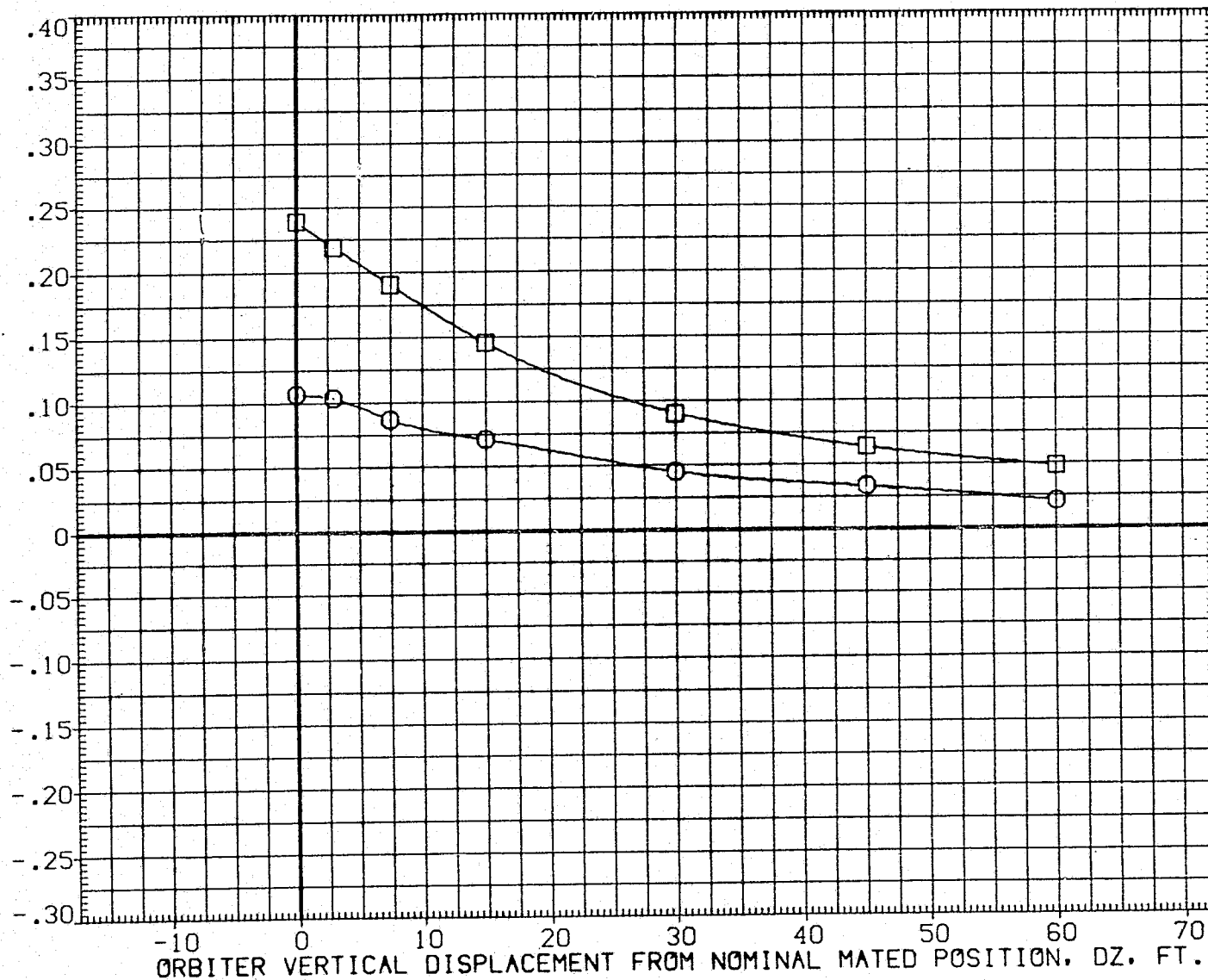


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

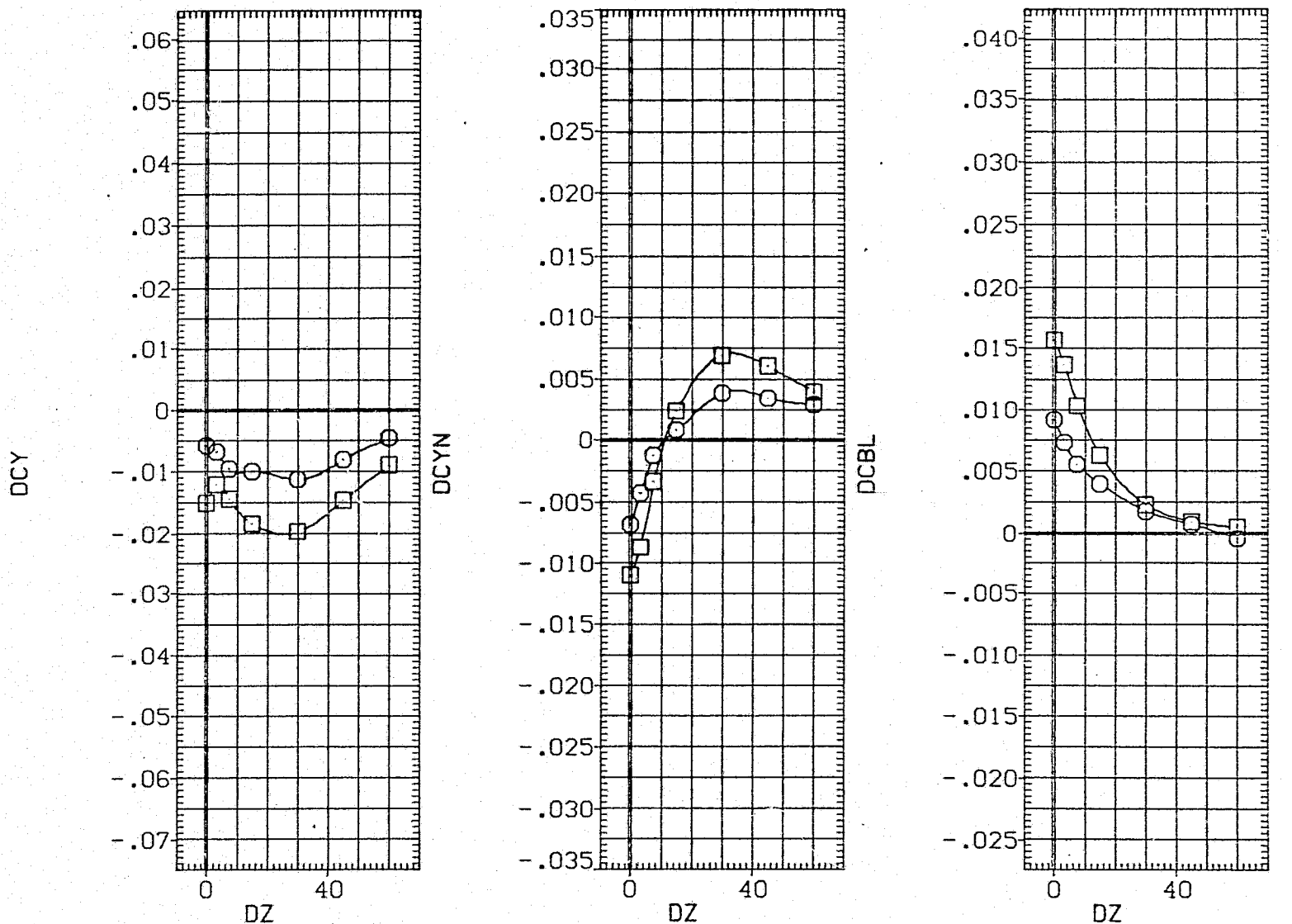


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC 4.000	BETAC .000
□	14.000	ELV-IB .000	ELV-OB 3.000
		ELEVON 5.000	MACH .600
		PHI .000	DX .000
		DY 10.000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

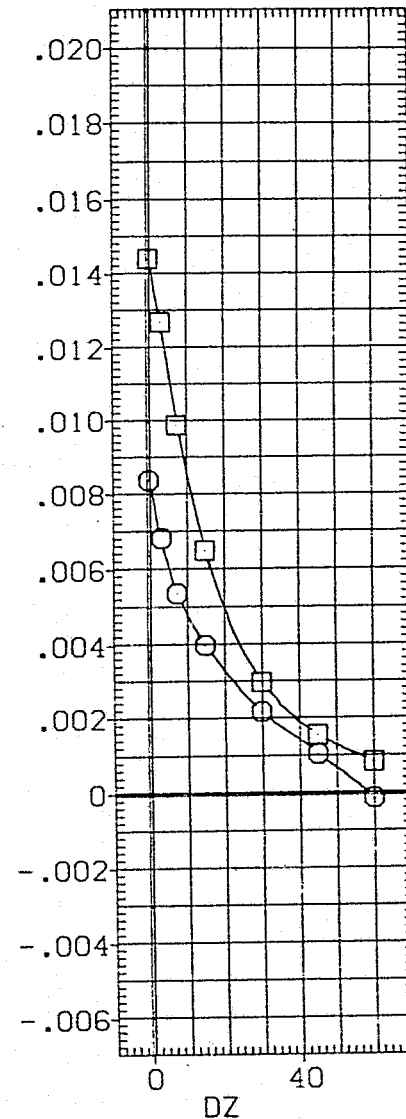
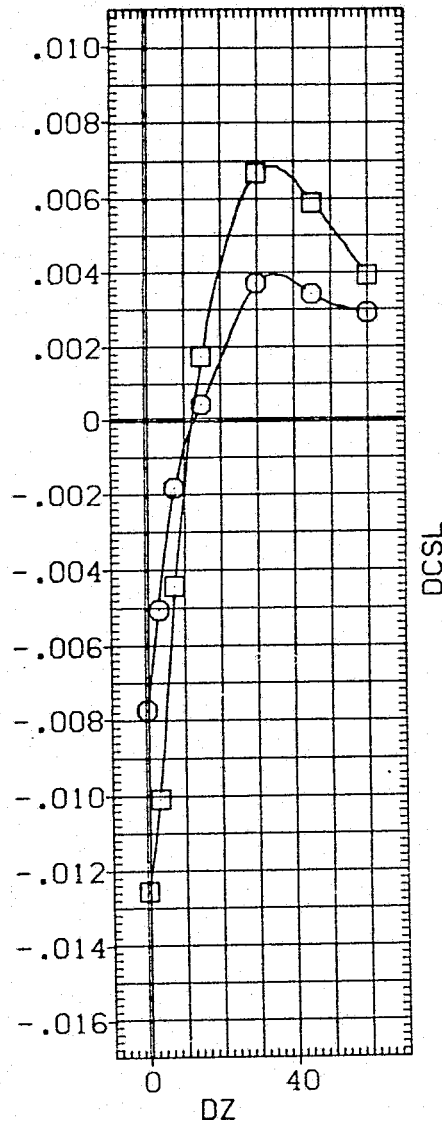
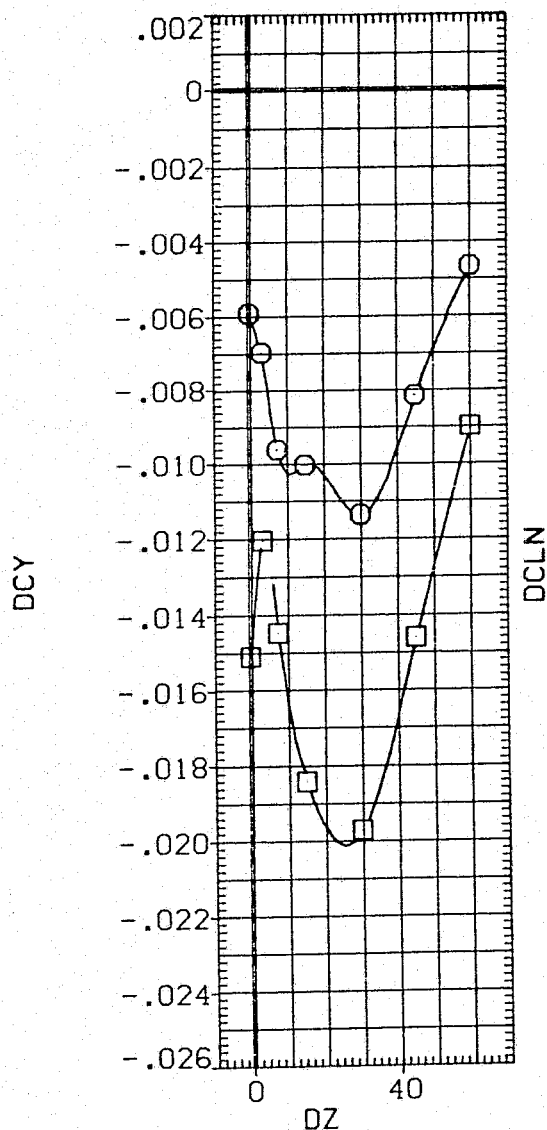


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

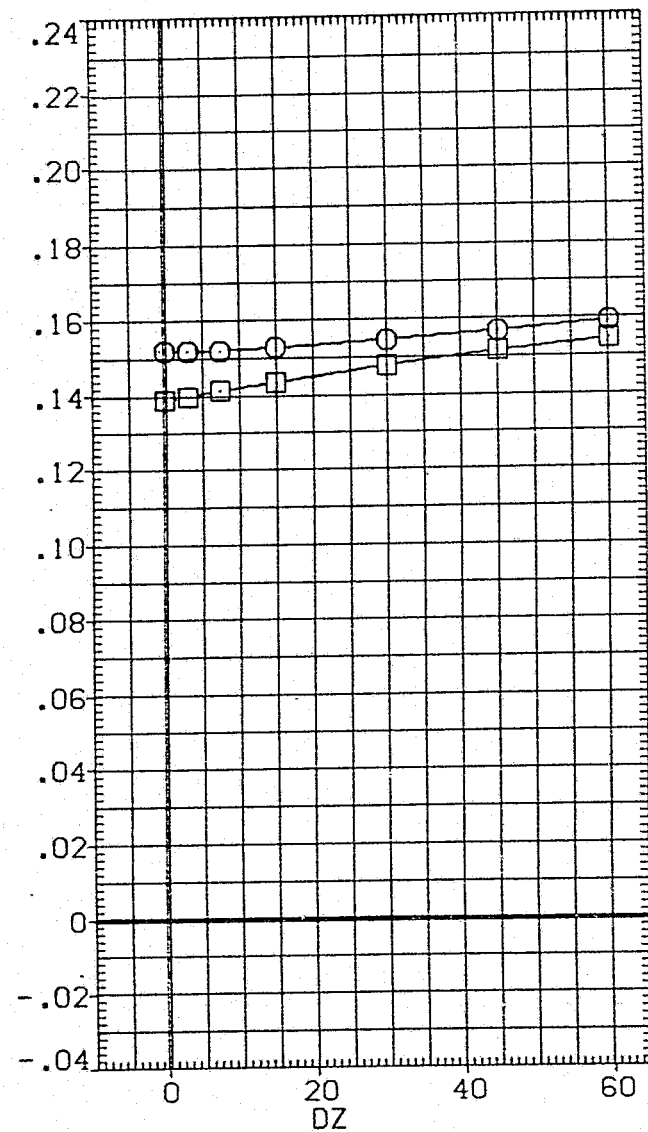
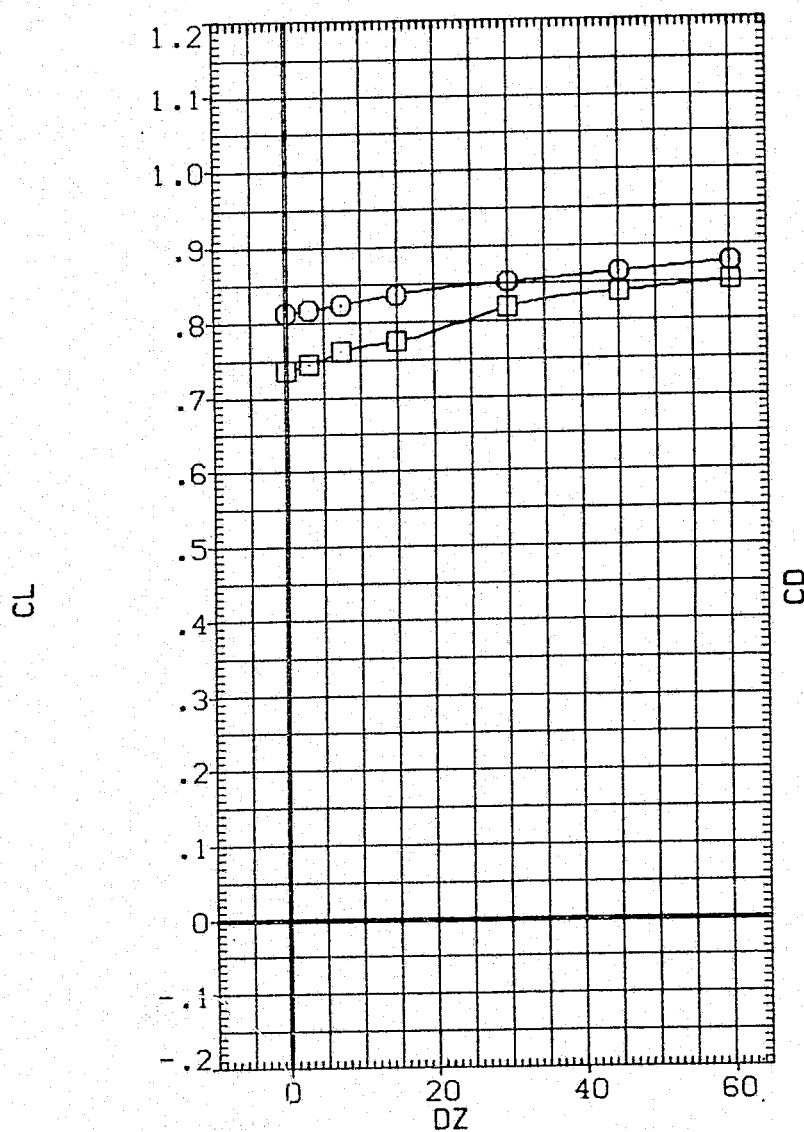


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

ELV-1B

14.000

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

ELV-0B

3.000

MACH

.600

BETAC

.000

DY

10.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF 5500.0000

SQ.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

IN.YC

ZMRP 190.8000

IN.ZC

SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

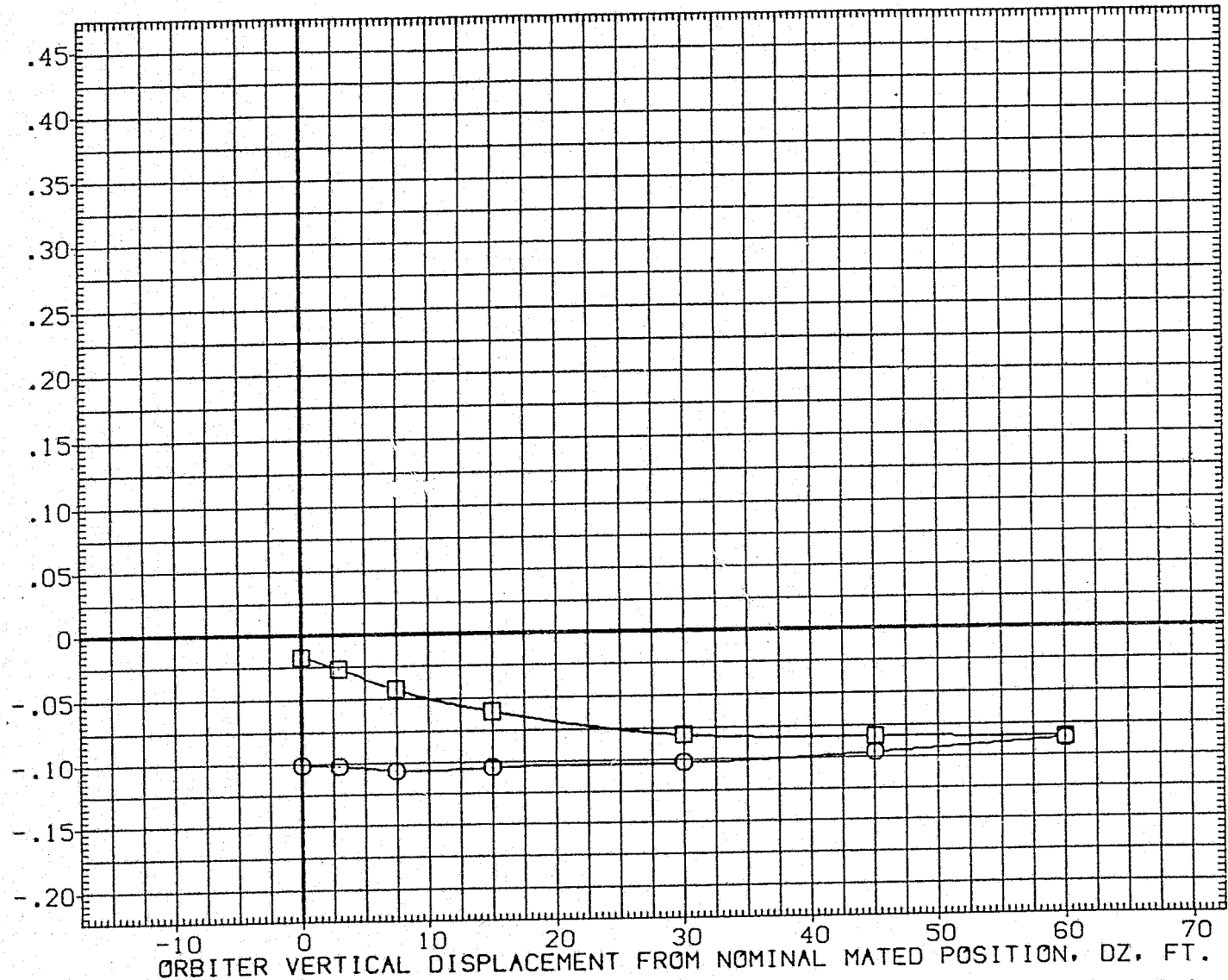


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGNO60)

SYMBOL



ALPHA0

10.000

ELV-1B

PARAMETRIC VALUES

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

.000

PHI

.000

DY

10.000

DX

.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

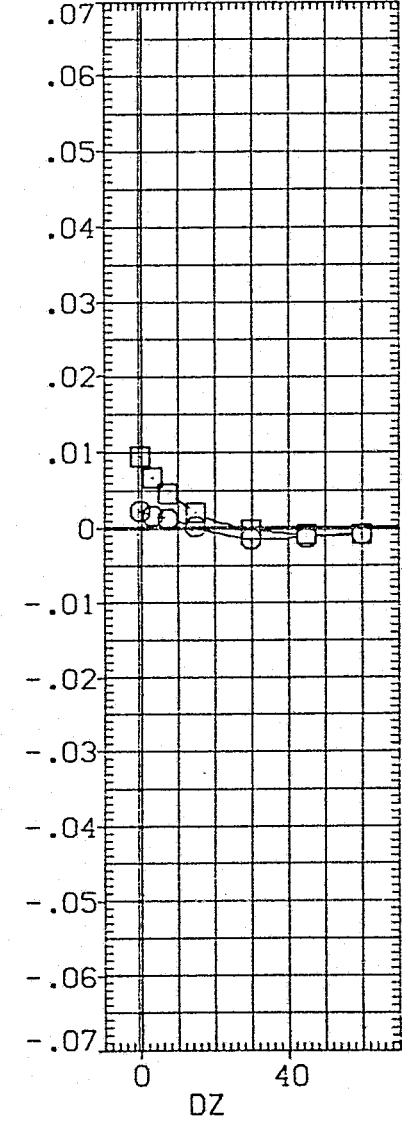
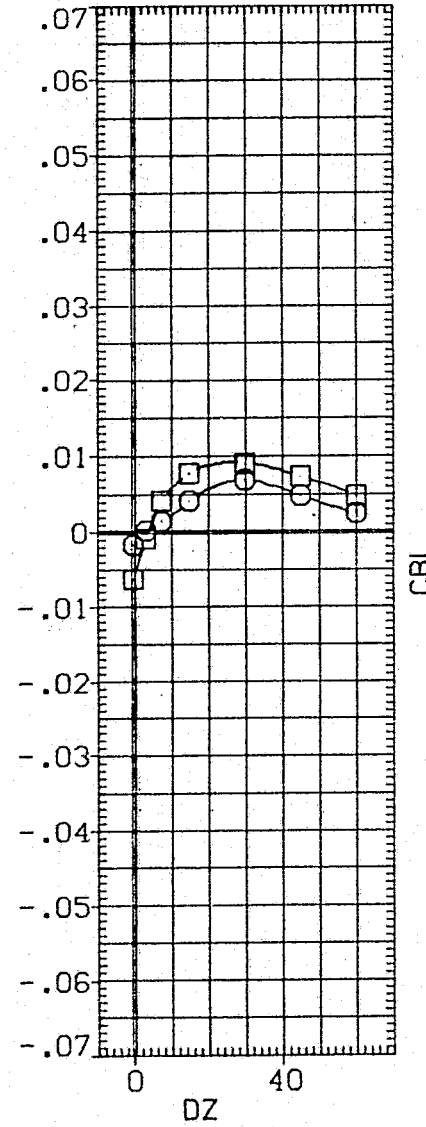
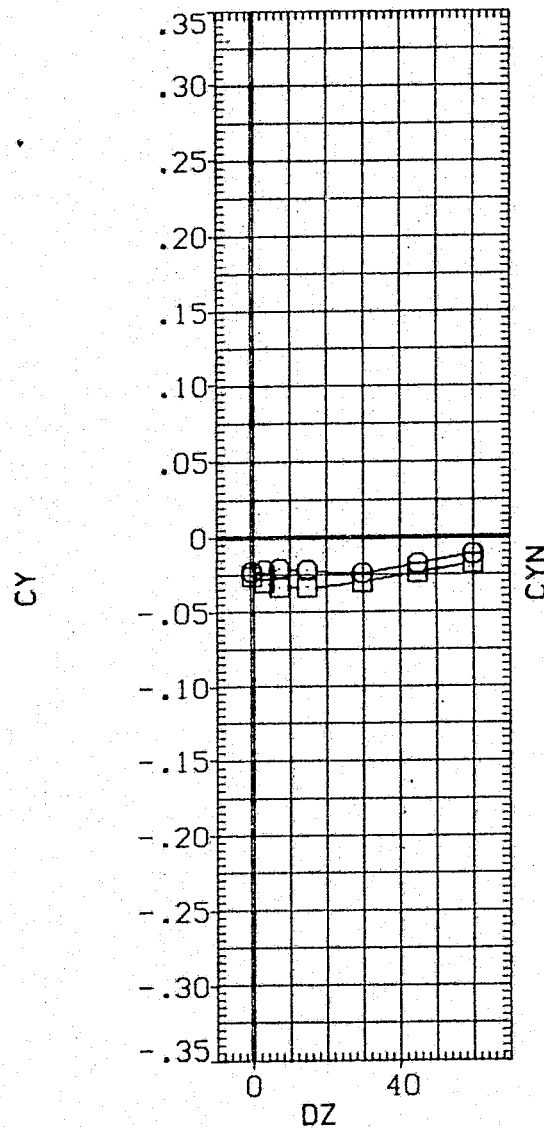


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC .000
		PHI .000 DY 10.000
		DX .000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

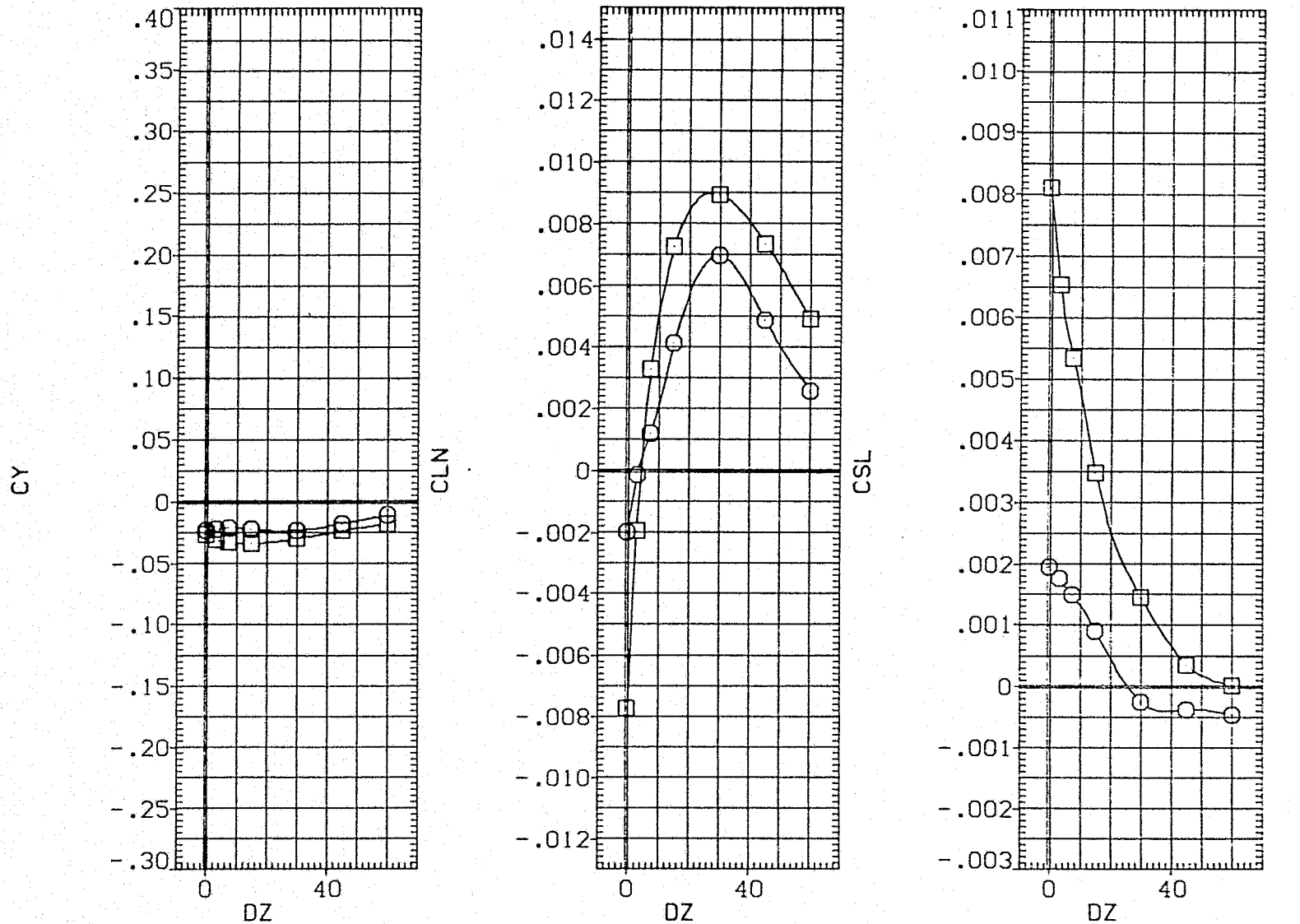


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC .000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX .000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION
SREF 5500.0000 50.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

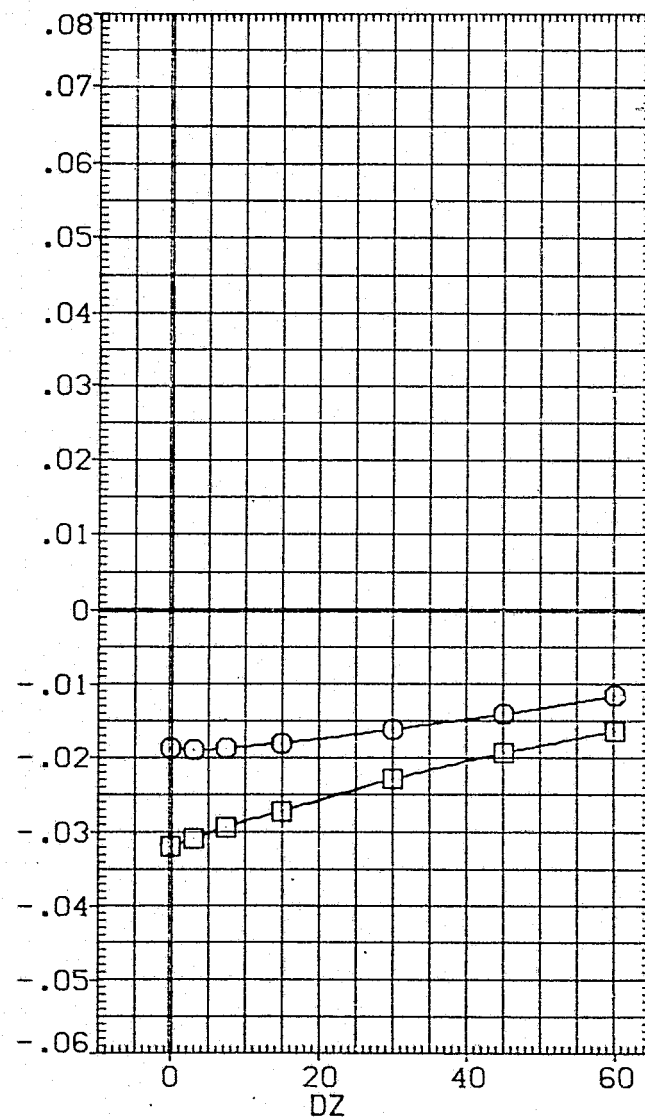
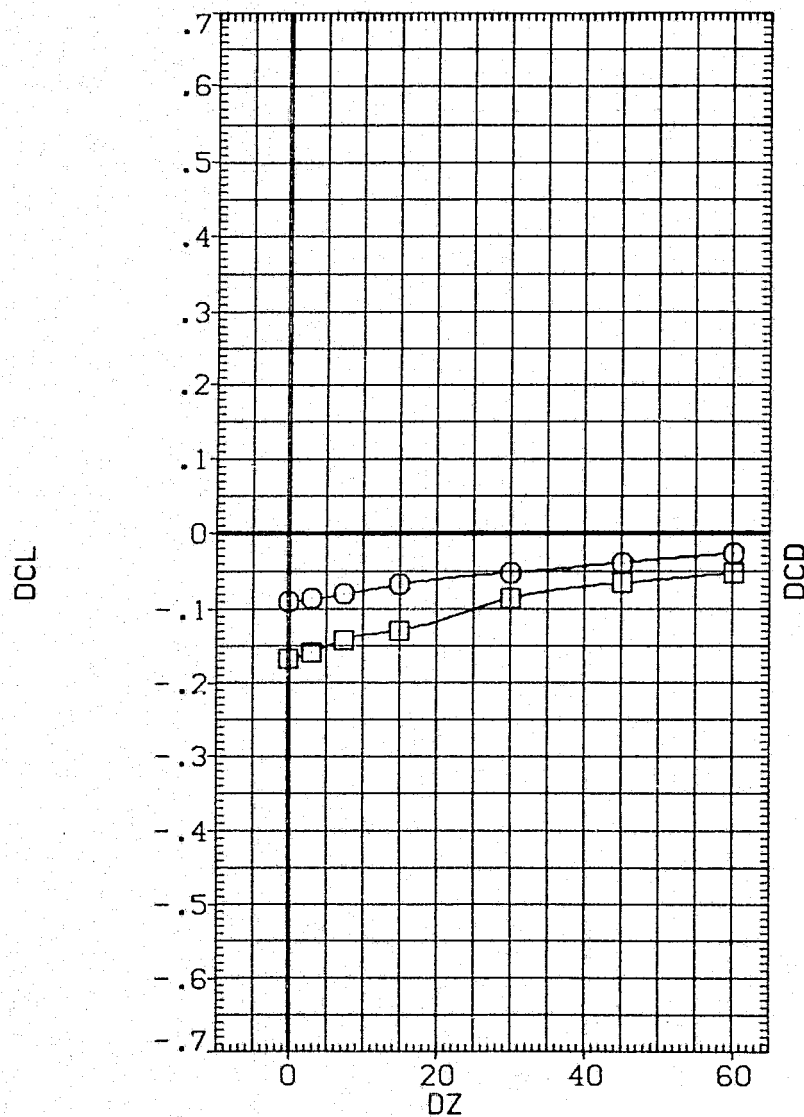


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

BETAC

.000

ELV-0B

3.000

MACH

.600

DX

.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

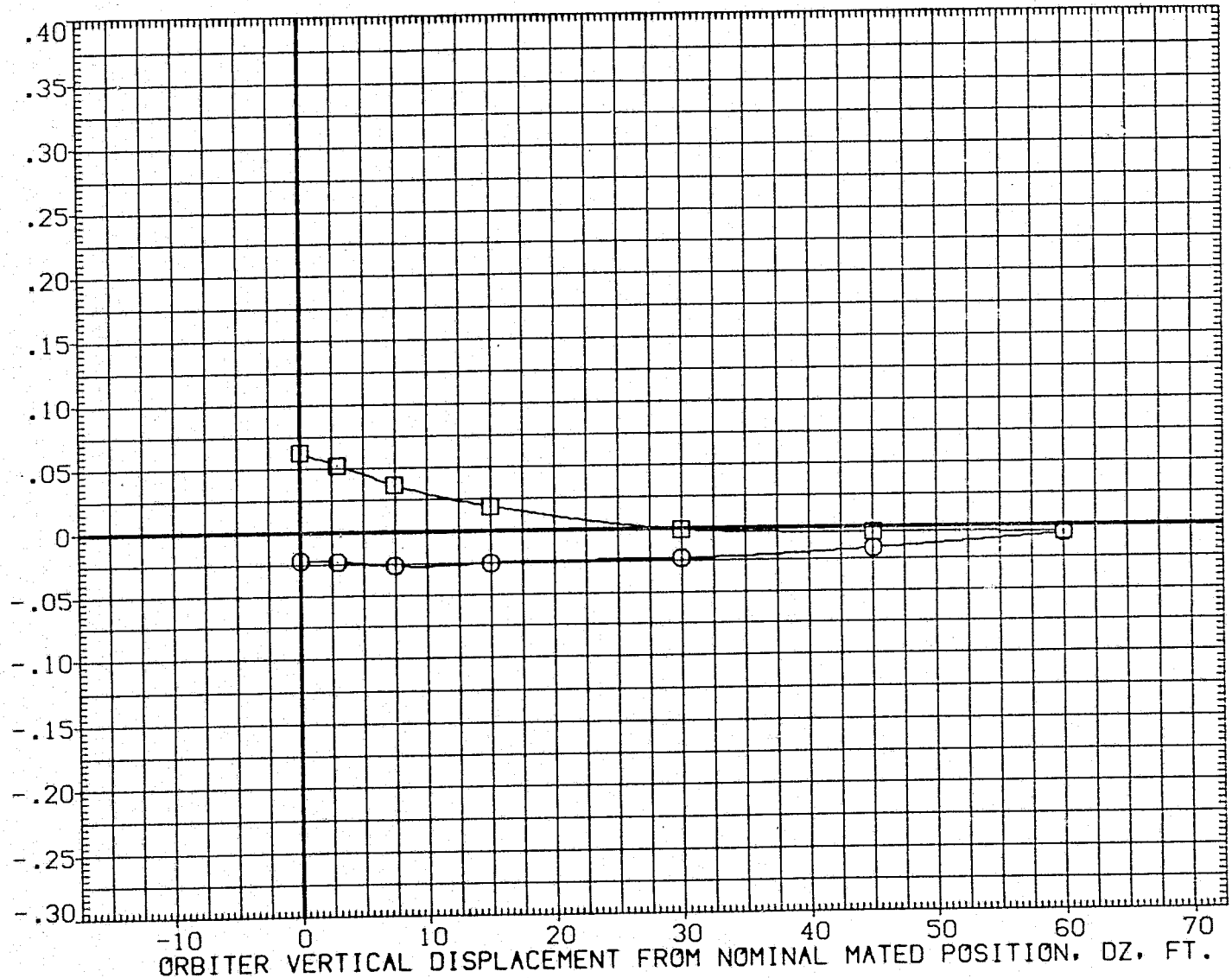


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC .000
□	14.000	ELV-18 .000 ELV-08 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX .000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

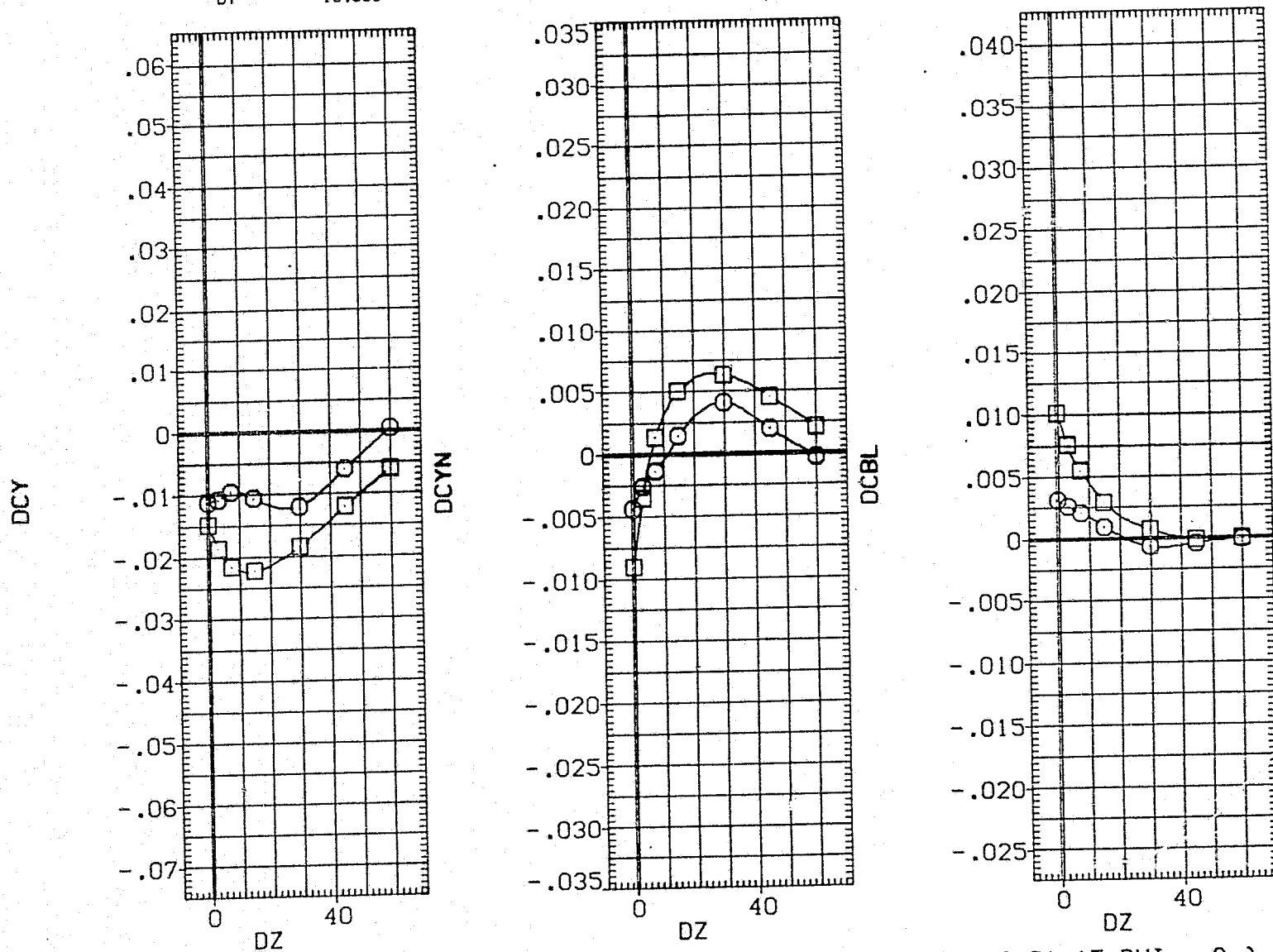


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	OX	.000
		OY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

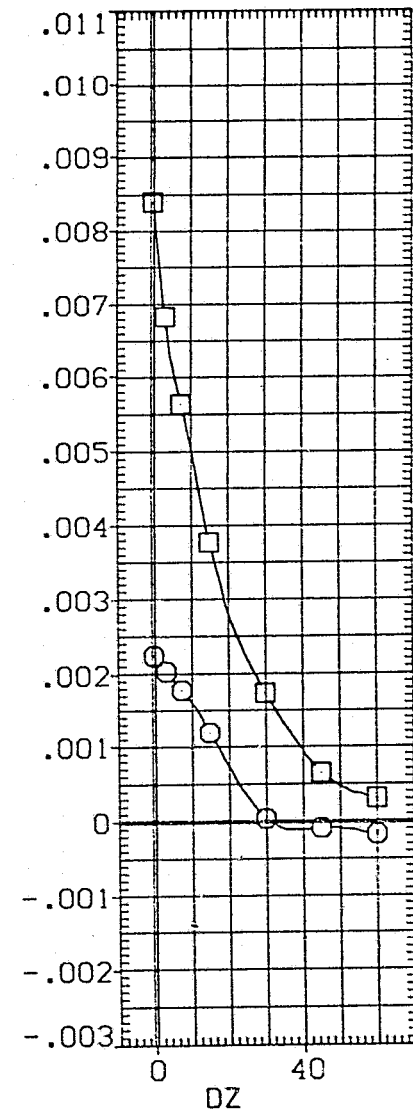
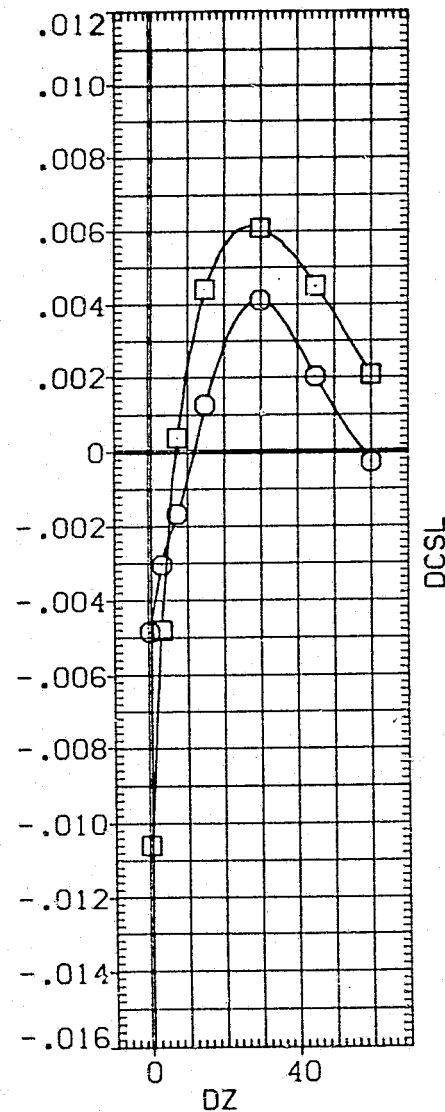
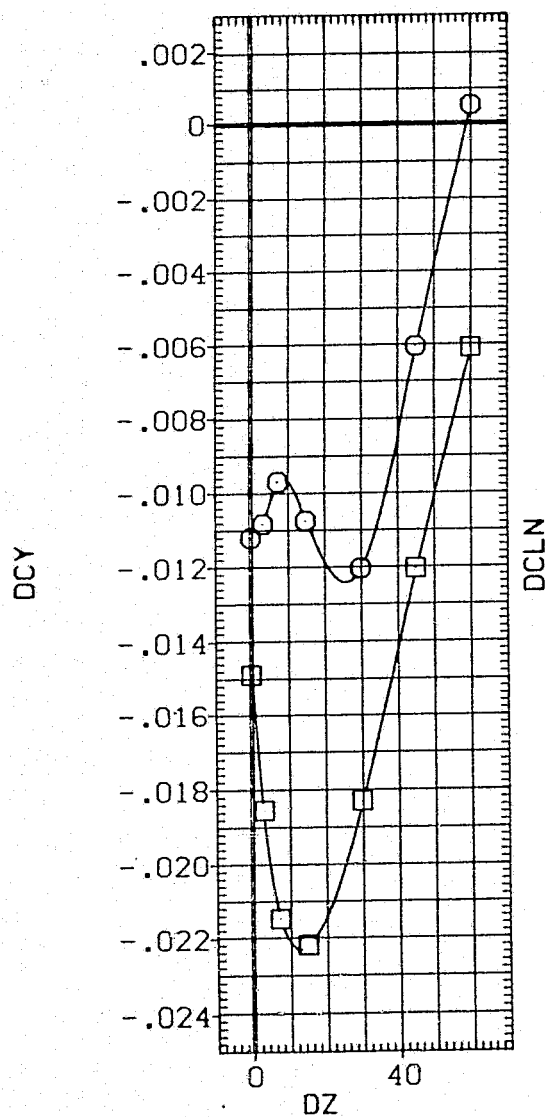


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	.000	MACH	3.000	
□	14.000	5.000	BETAC	.600	
		.000	DY	10.000	
		.000	ALPHAC	4.000	
		10.000			

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

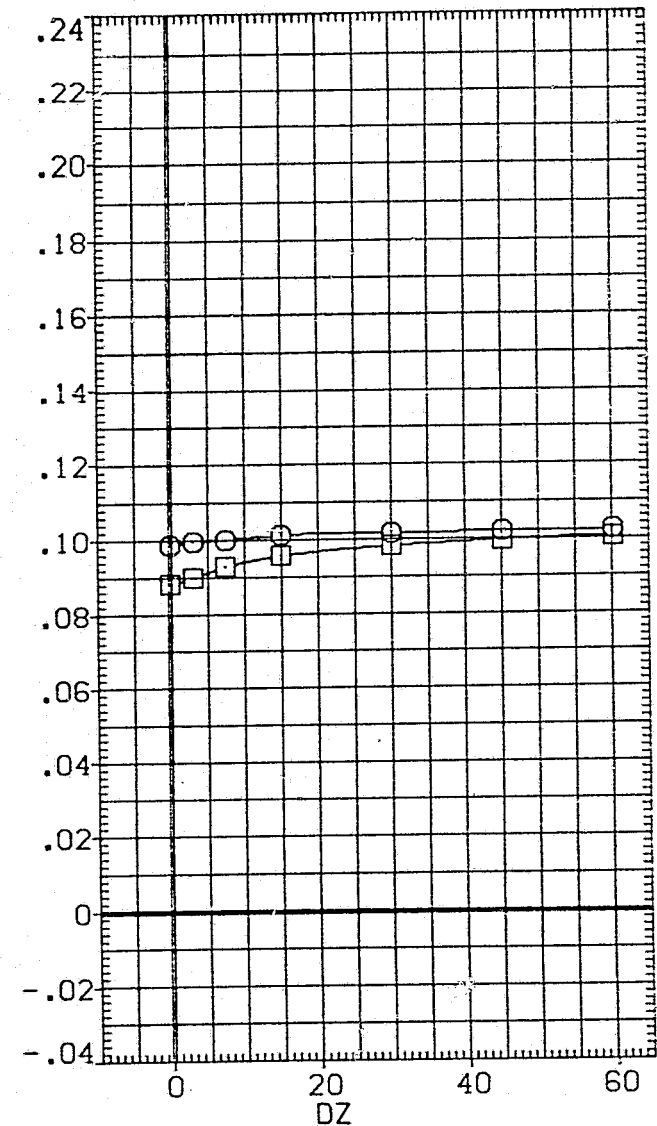
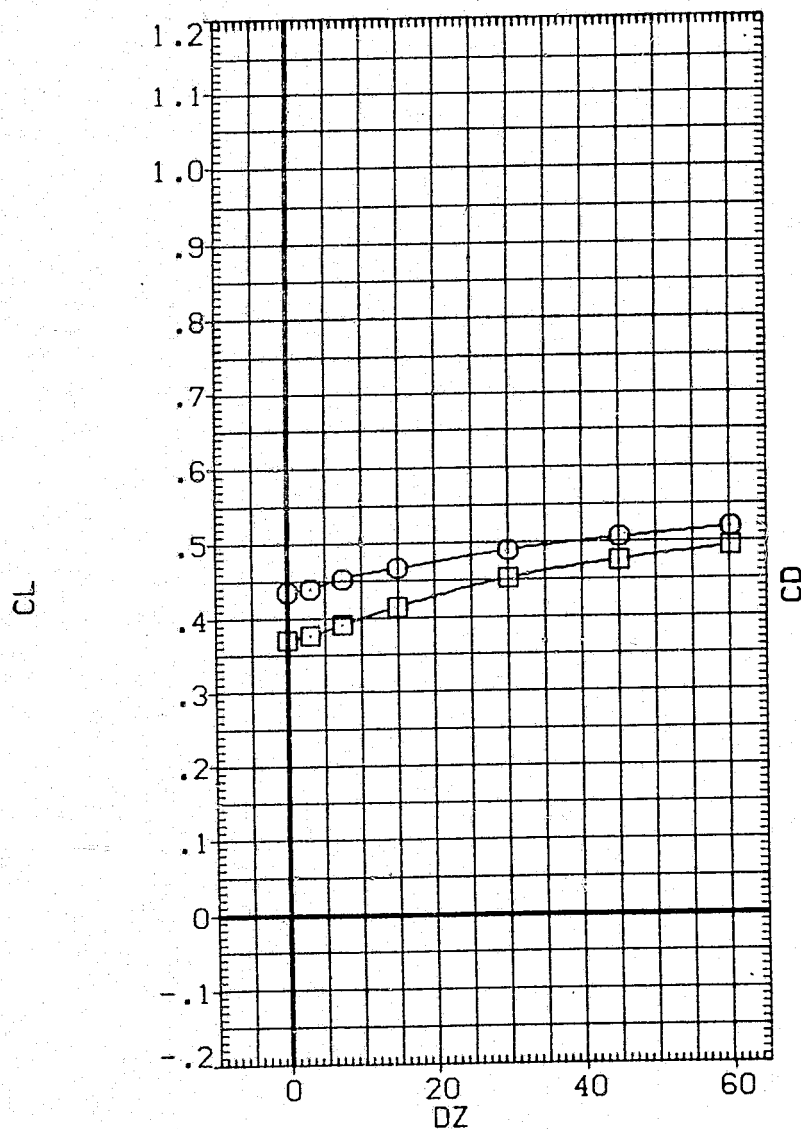


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEV0N	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	.000	DY	10.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

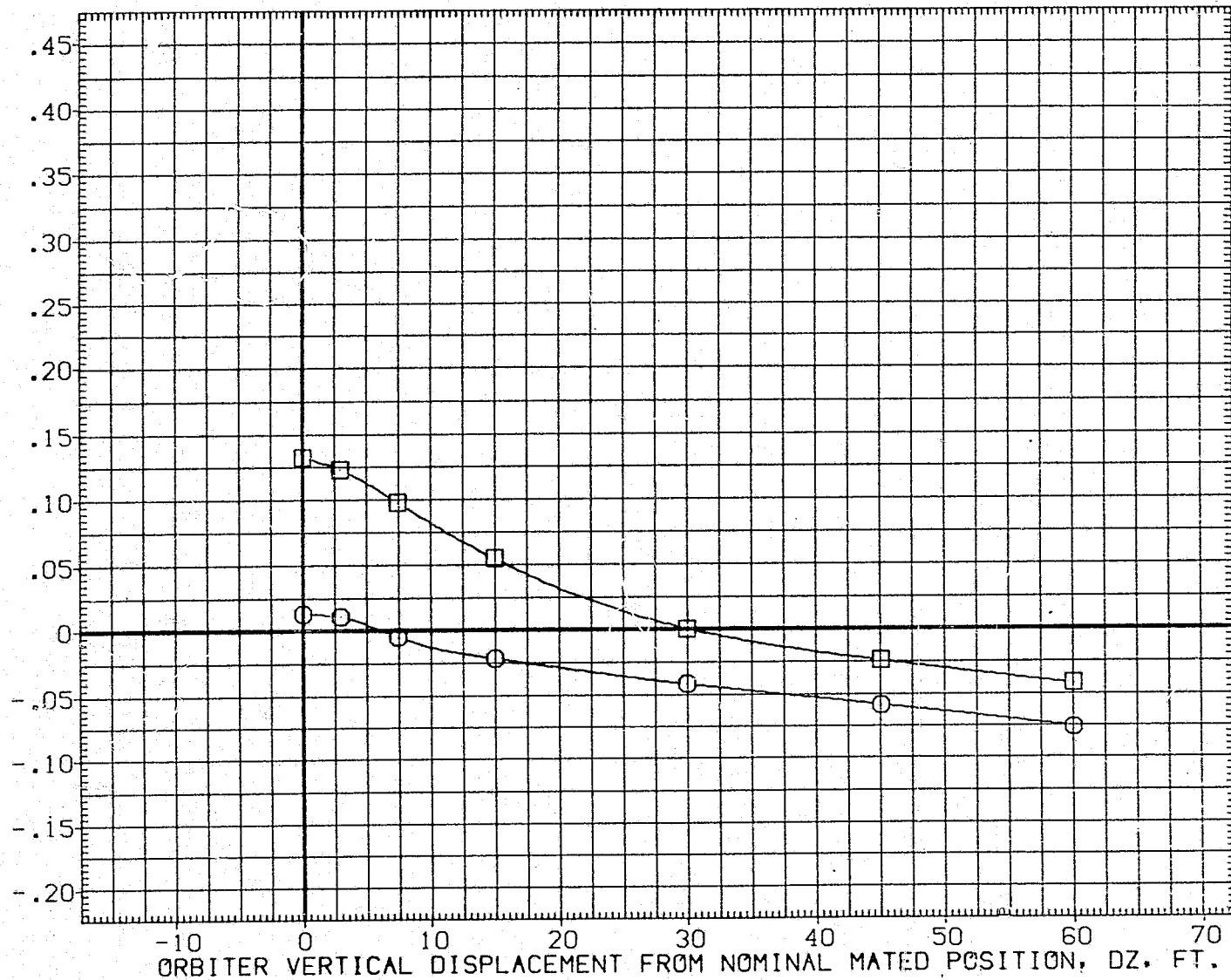


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC .000
		PHI .000 DY 10.000
		DX 10.000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

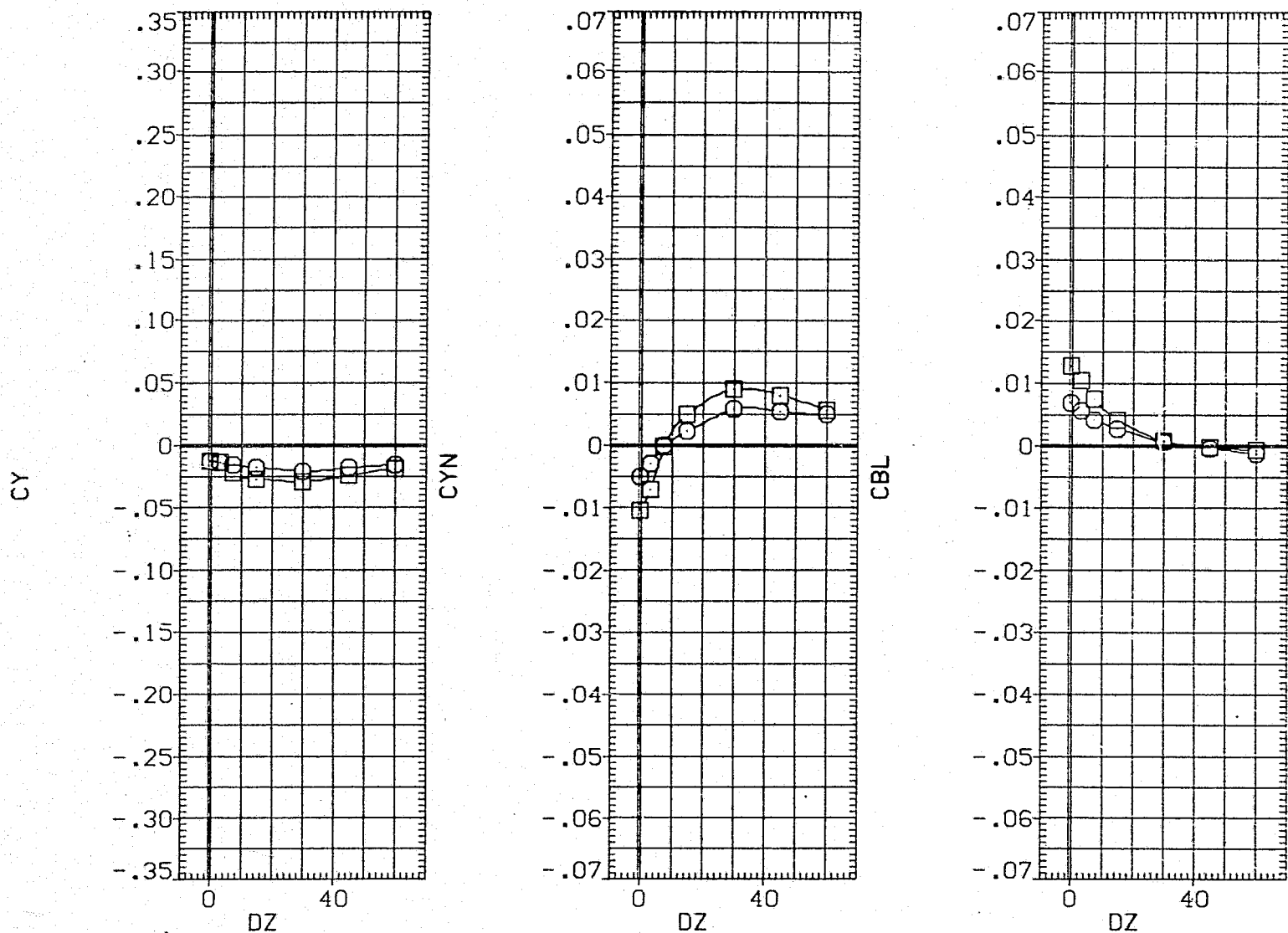


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	OY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

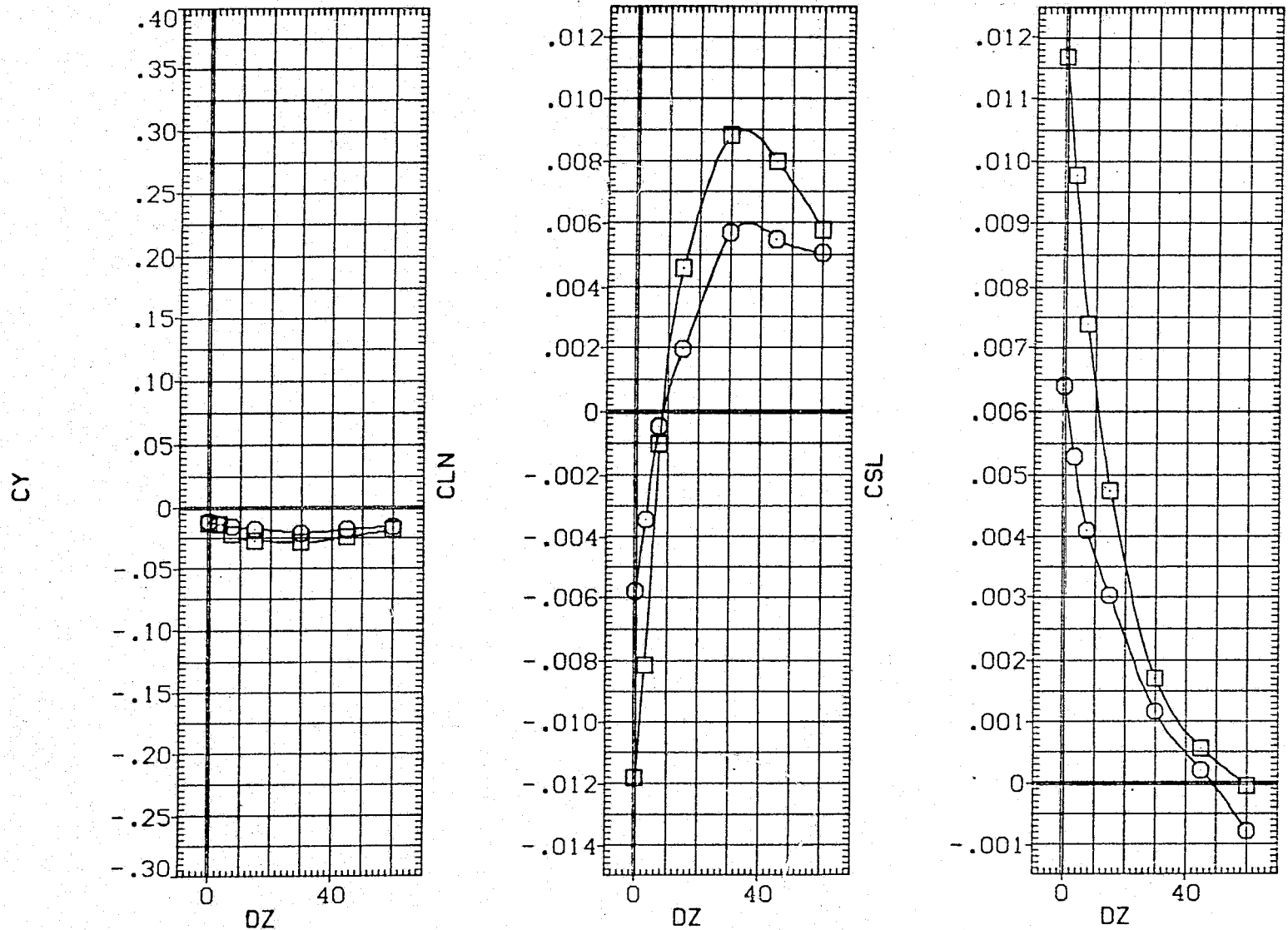


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	190.8000	IN.ZC
SCALE	.0300	

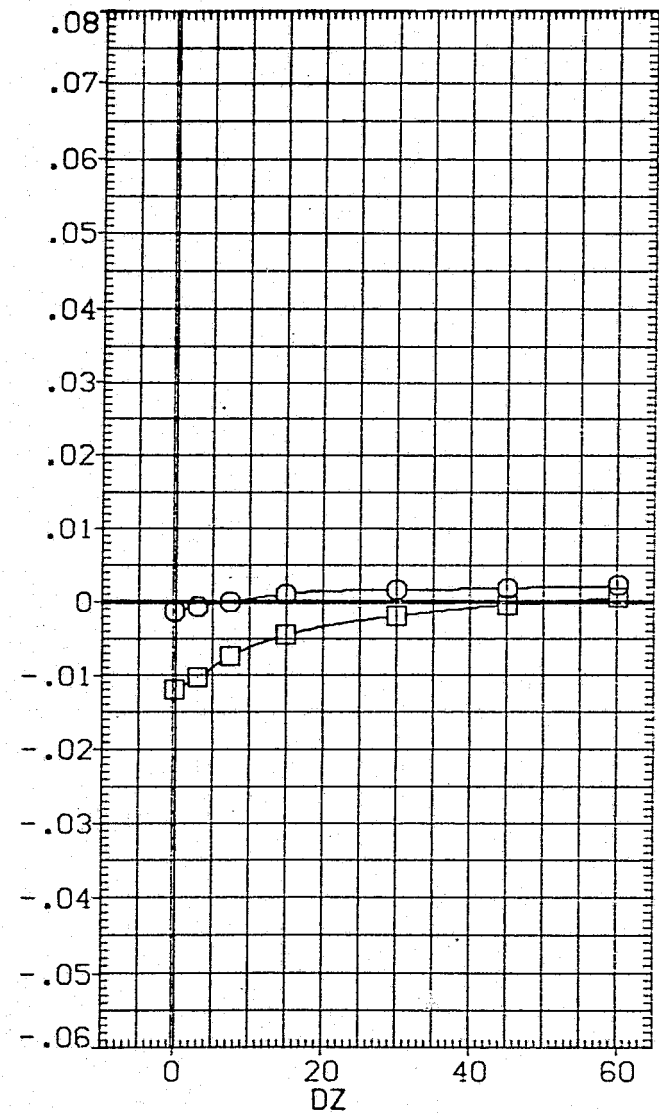
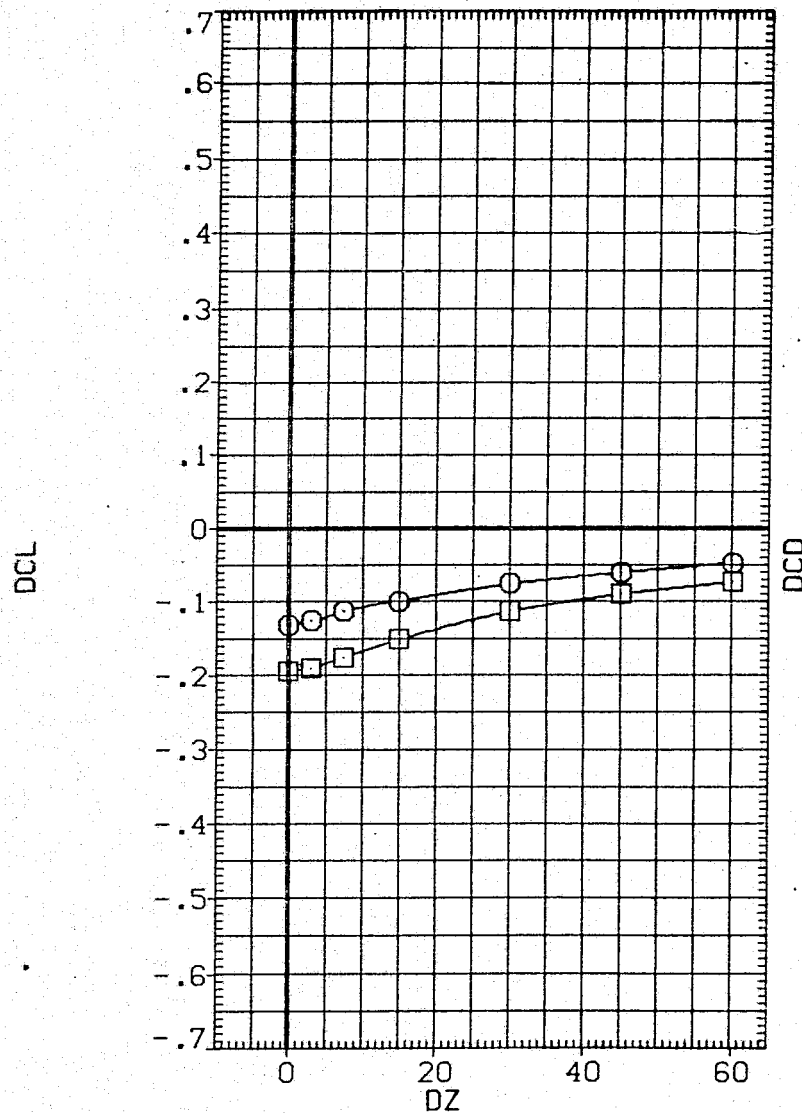


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

ALPHAC

14.000

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

BETAC

.000

ELV-OB

MACH

DX

BETA0

.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

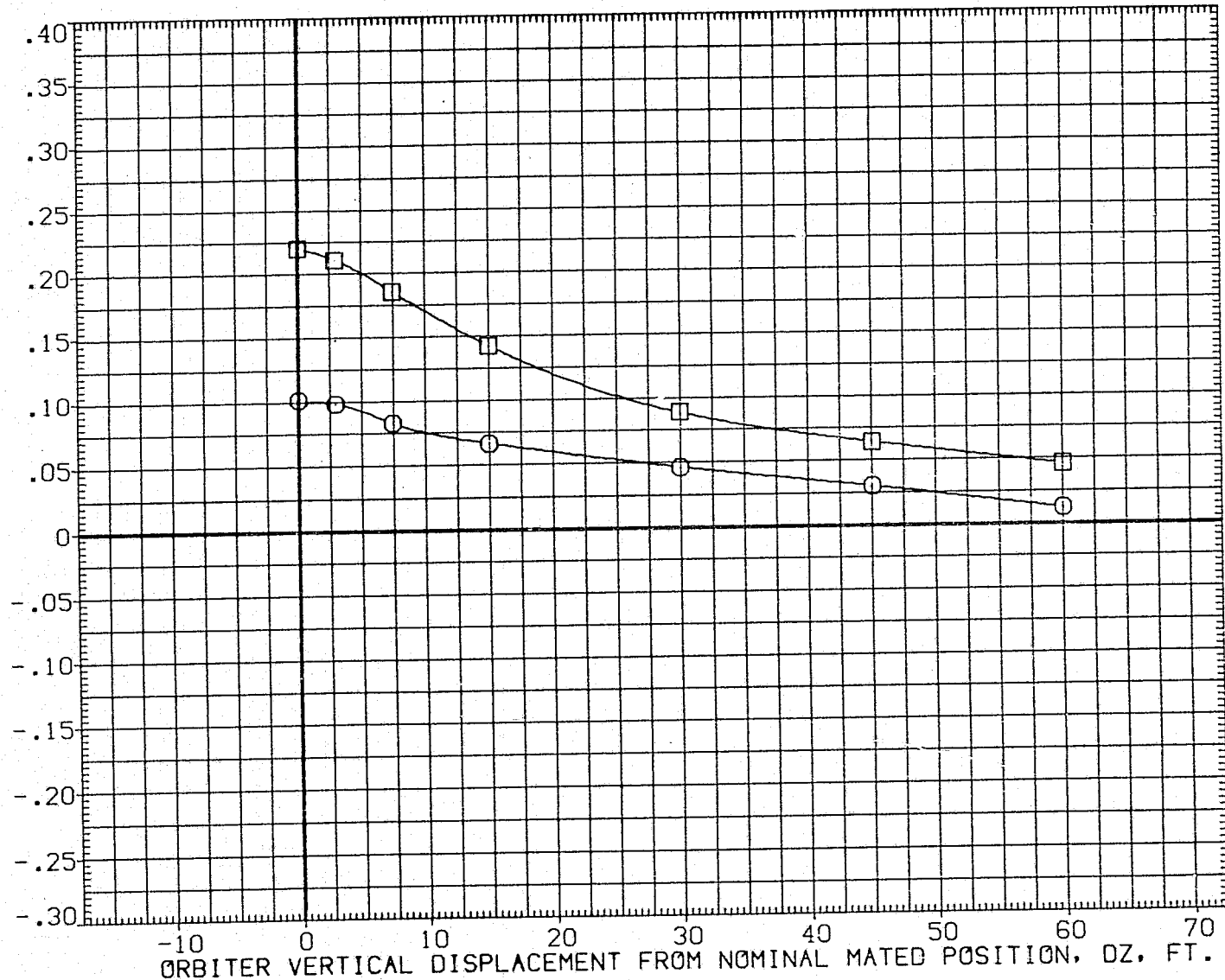


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC .000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

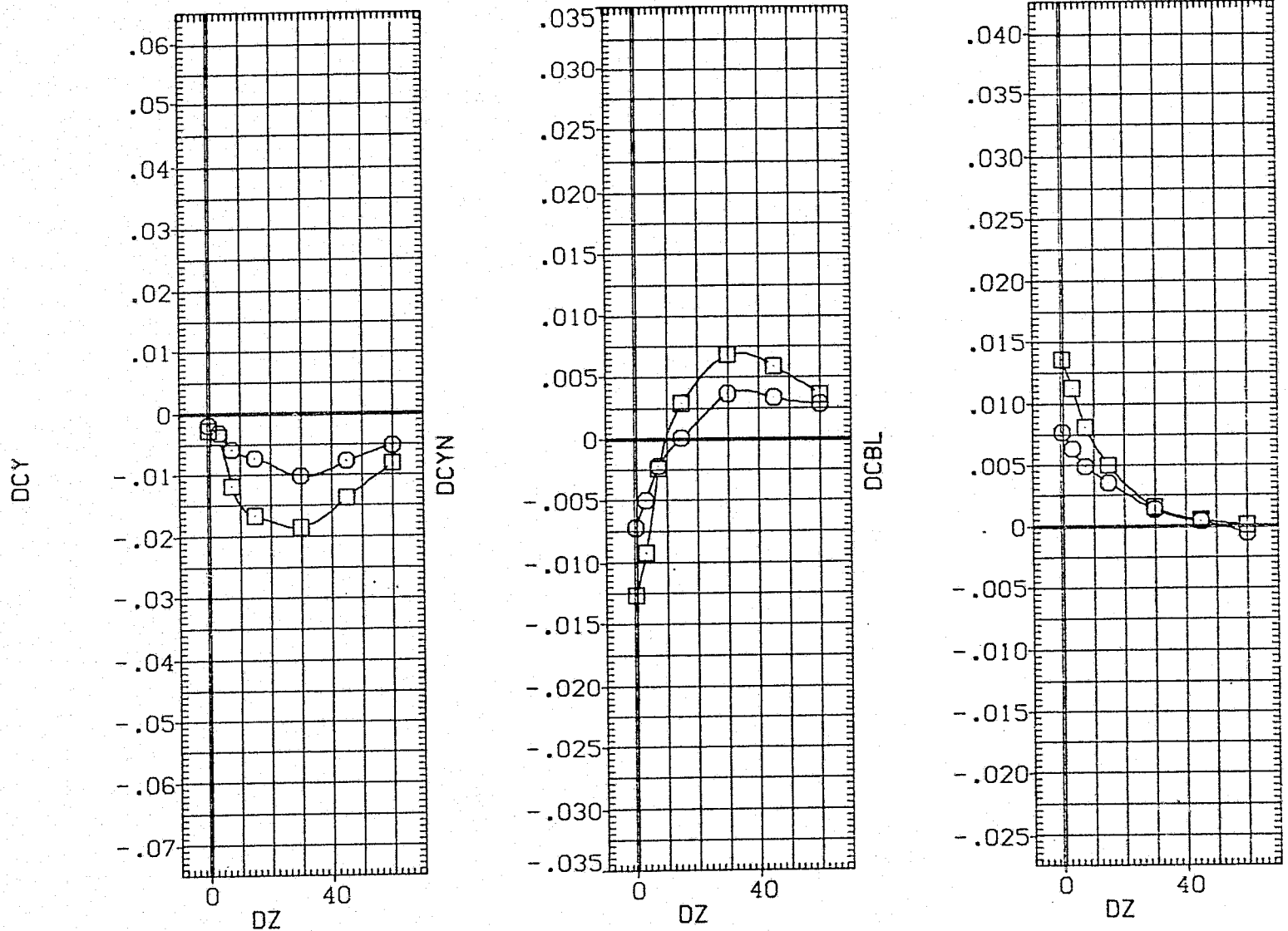


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	4.000	BETAC	.000
○	14.000	ELV-1B	.000	ELV-0B	3.000
□		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

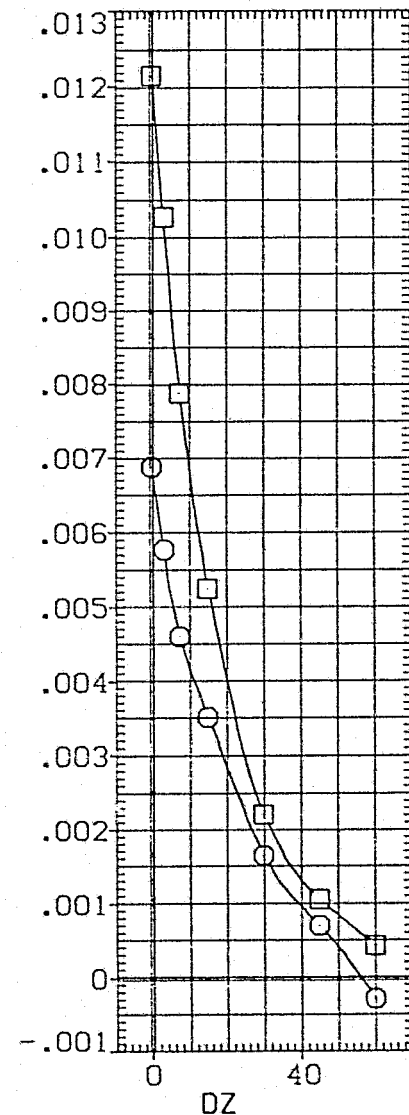
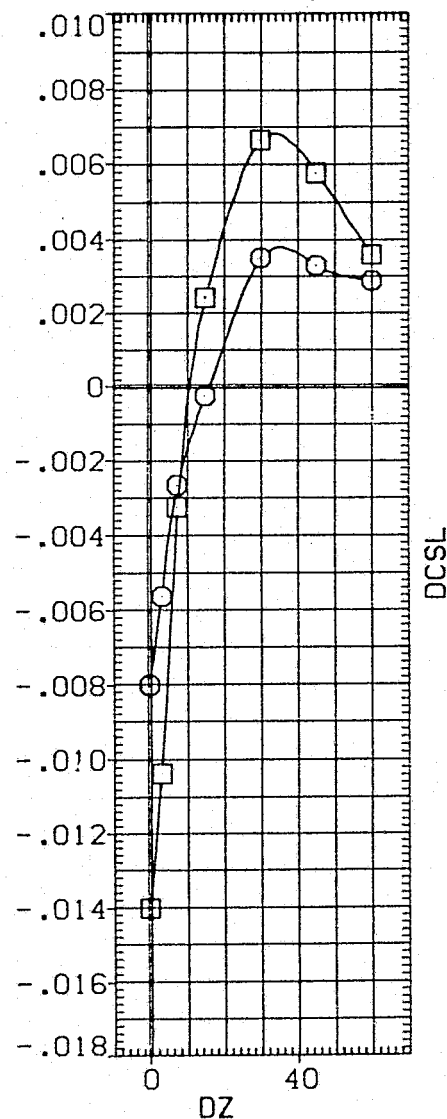
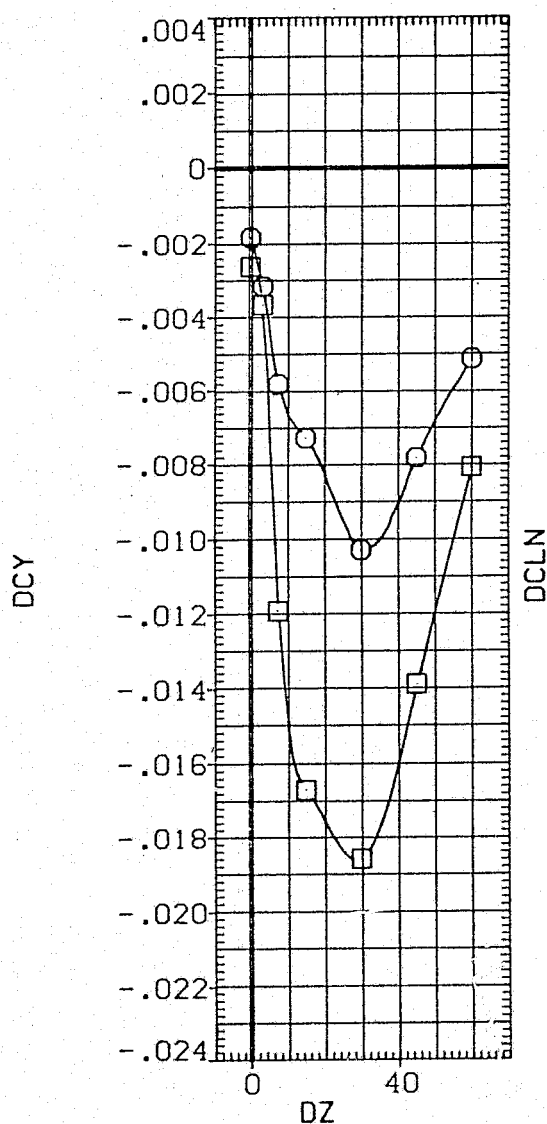


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC .000
		PHI .000 DY 10.000
		DX 10.000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SD.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

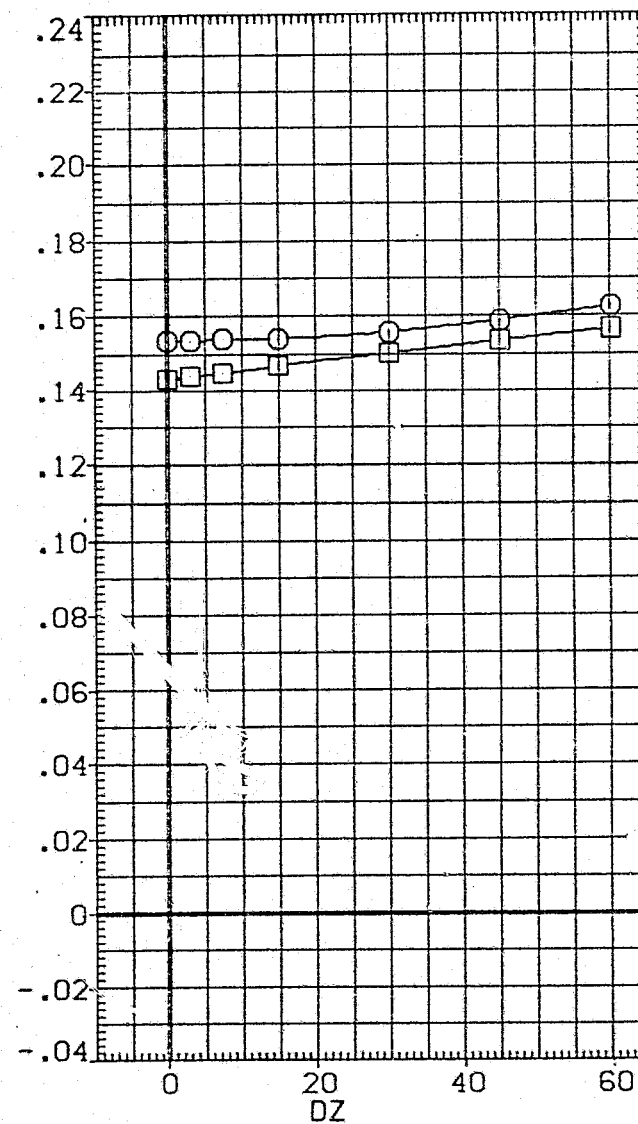
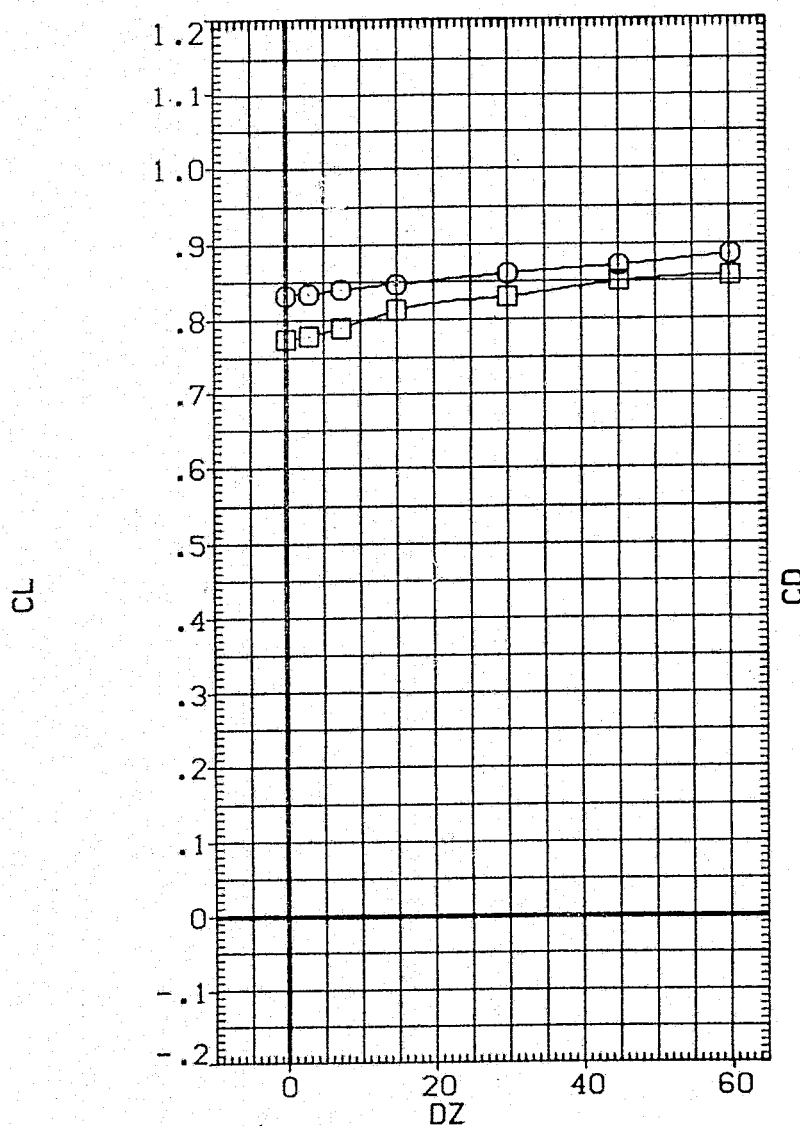


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEV0N	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	.000	DY	10.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

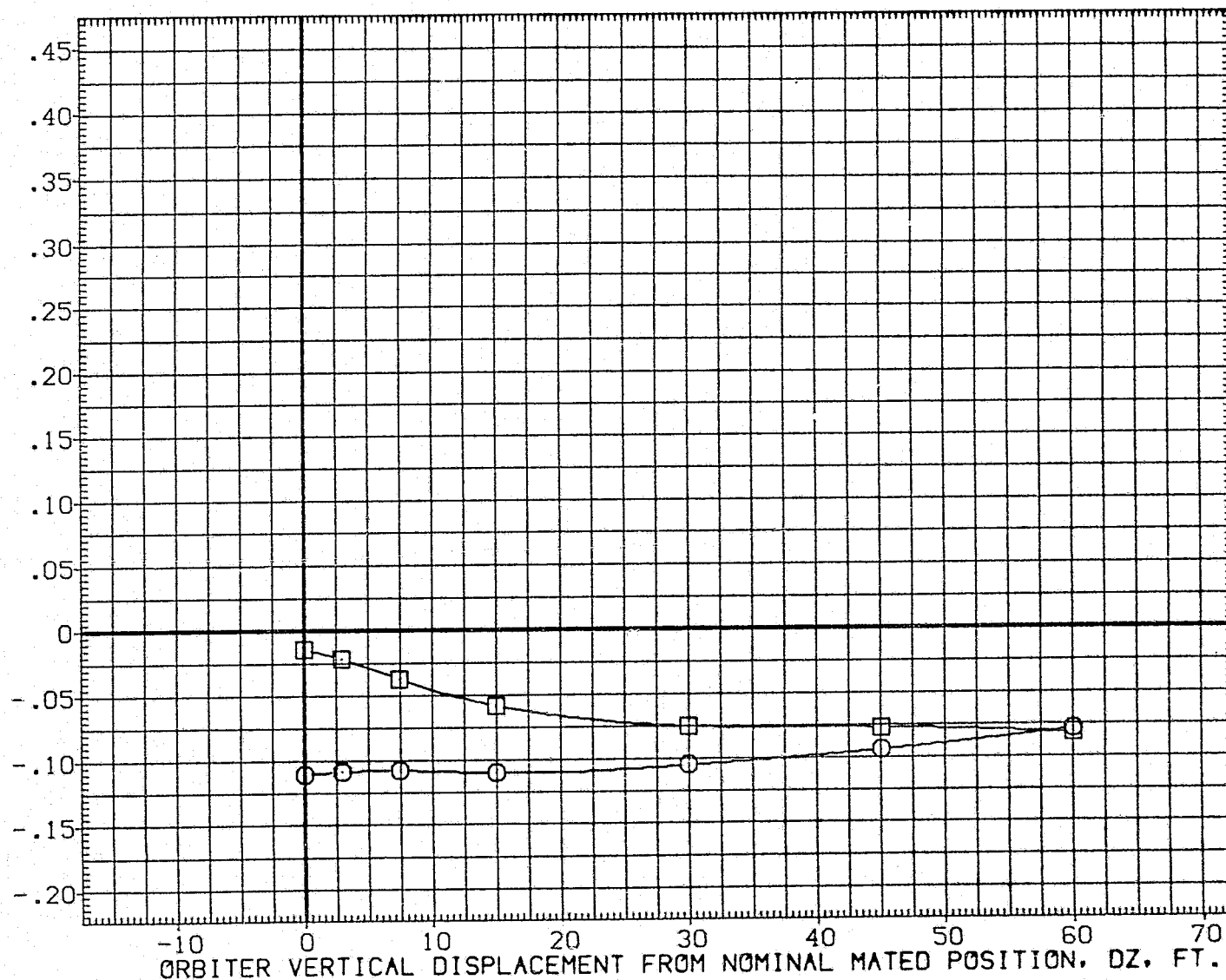


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	.000	MACH	3.000
□	14.000	5.000	BETAC	.600
		.000	DY	10.000
		.000	ALPHAC	8.000
		10.000		

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

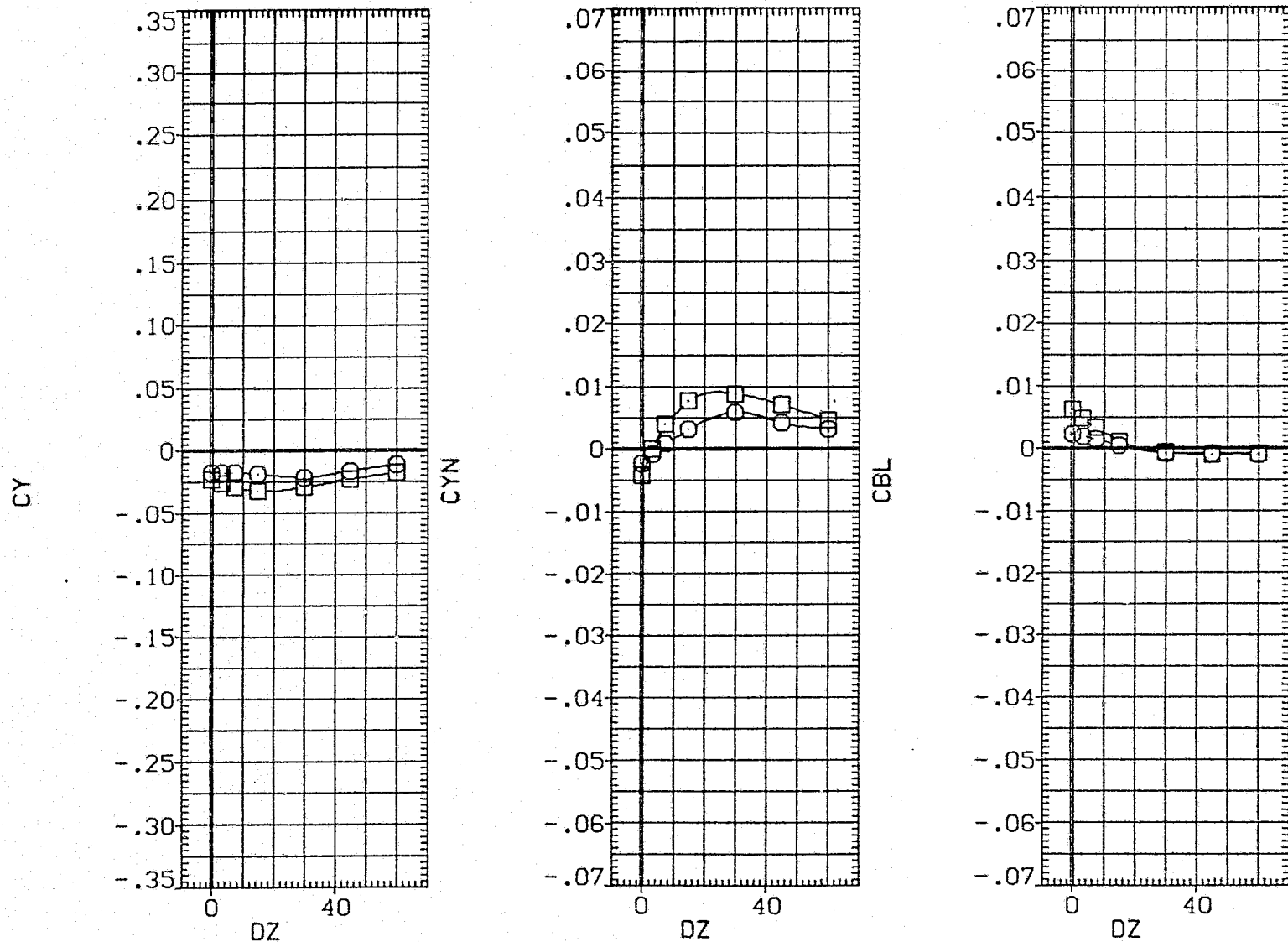


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	DY	.000
		DX	10.000	ALPHAC	10.000
					8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

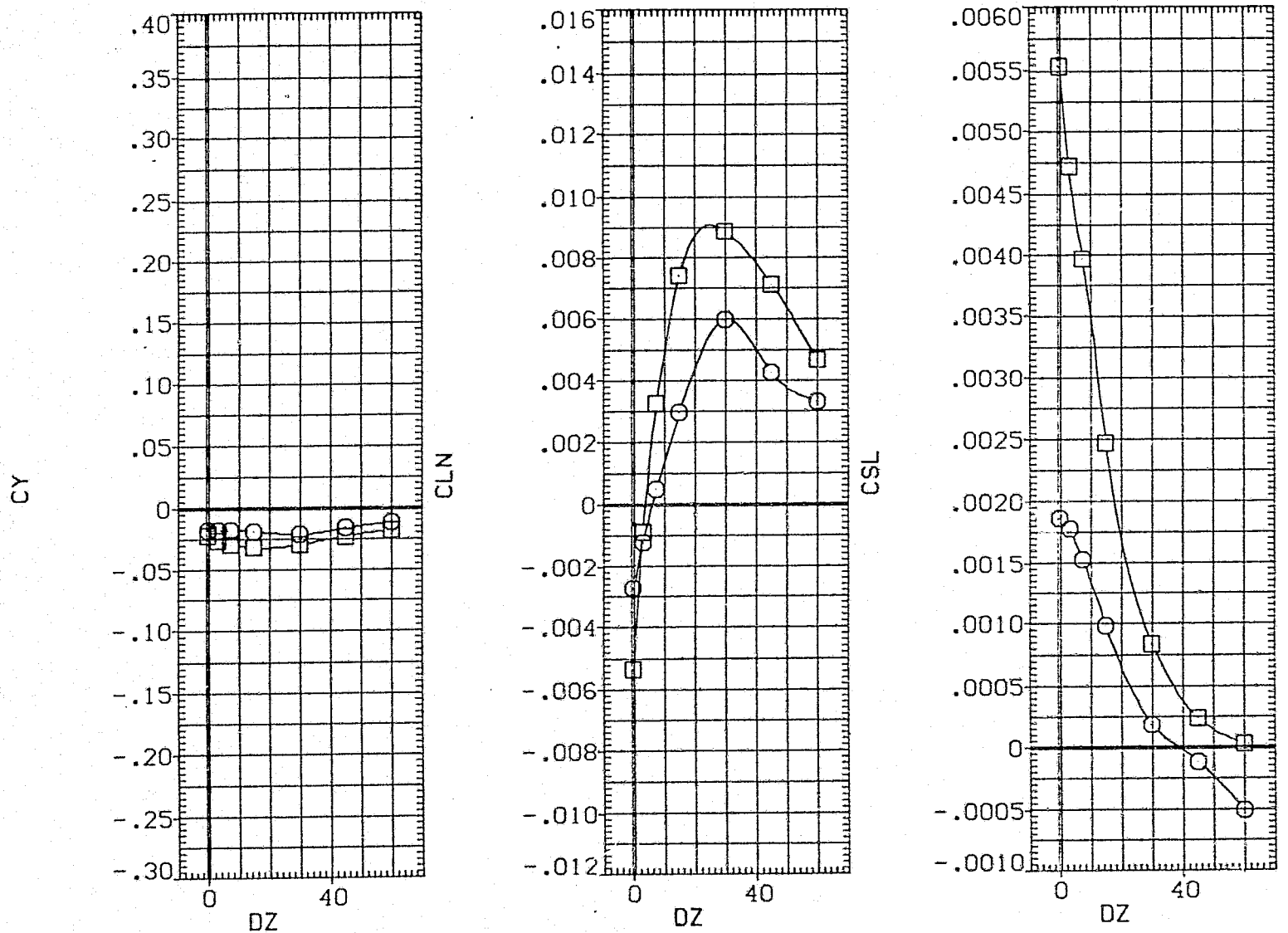


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC .000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.600
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1338.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

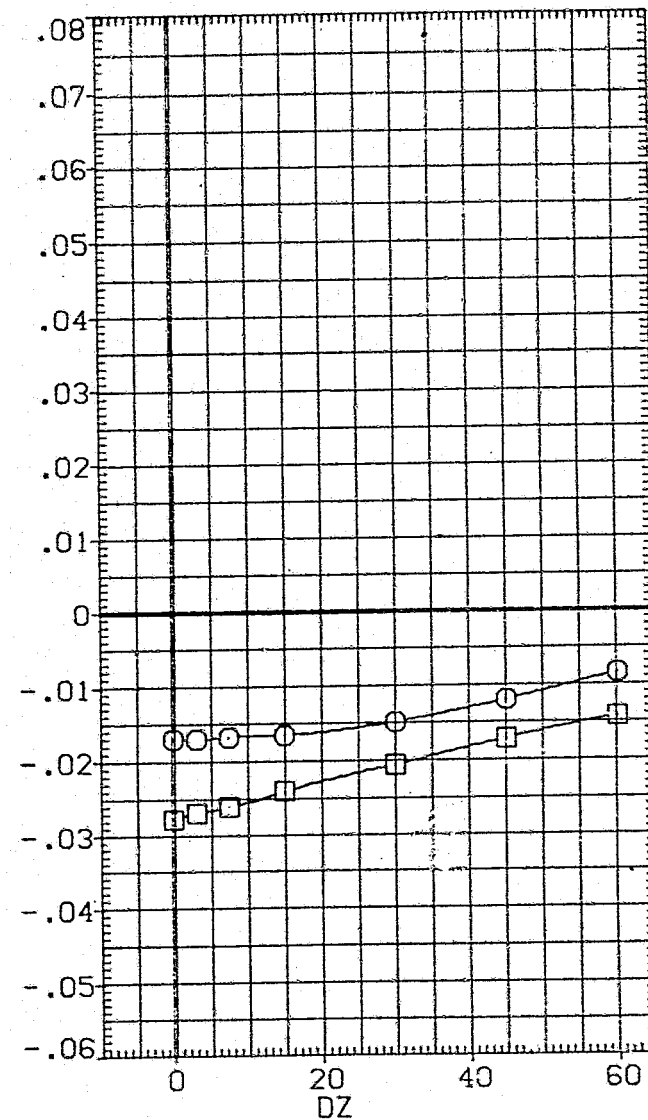
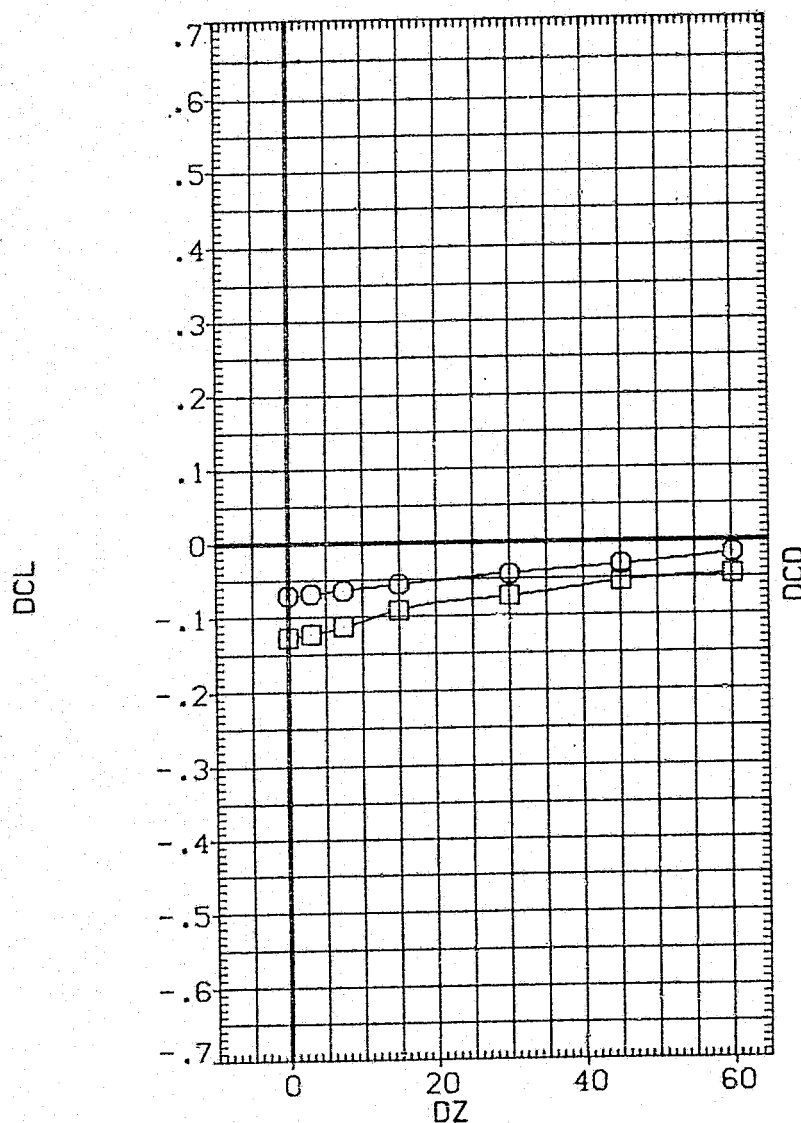


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL




ALPHA0

10.000

ALPHAC

14.000

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

BETAC

ELV-0B

MACH

DX

BETA0

.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF

5500.0000

50.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

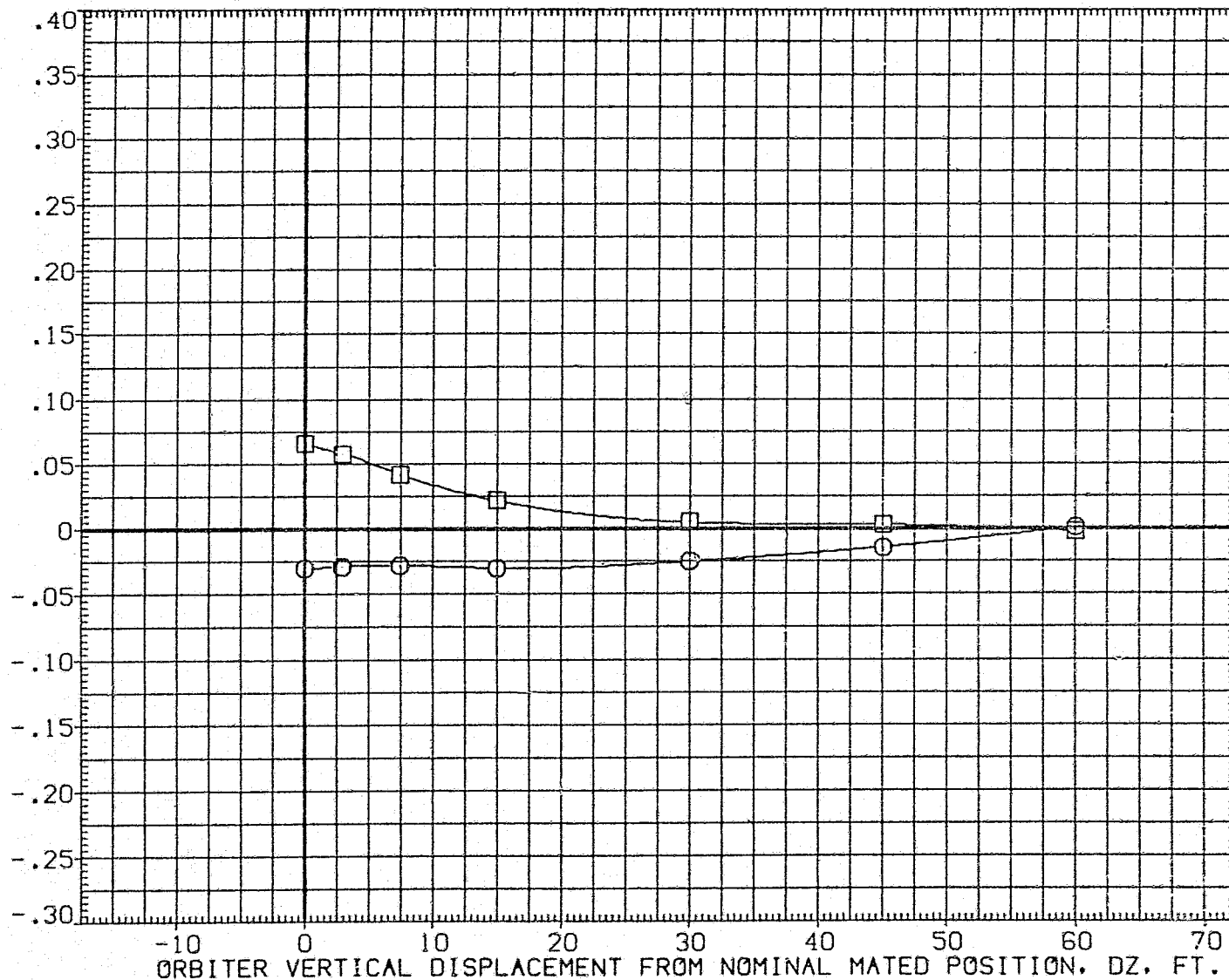


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC	
○	10.000	ELV-1B	8.000	ELV-0B	.000
□	14.000	ELEVON	.000	MACH	3.000
		PHI	5.000	DX	.600
		DY	.000	BETA0	10.000
			10.000		.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.8000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

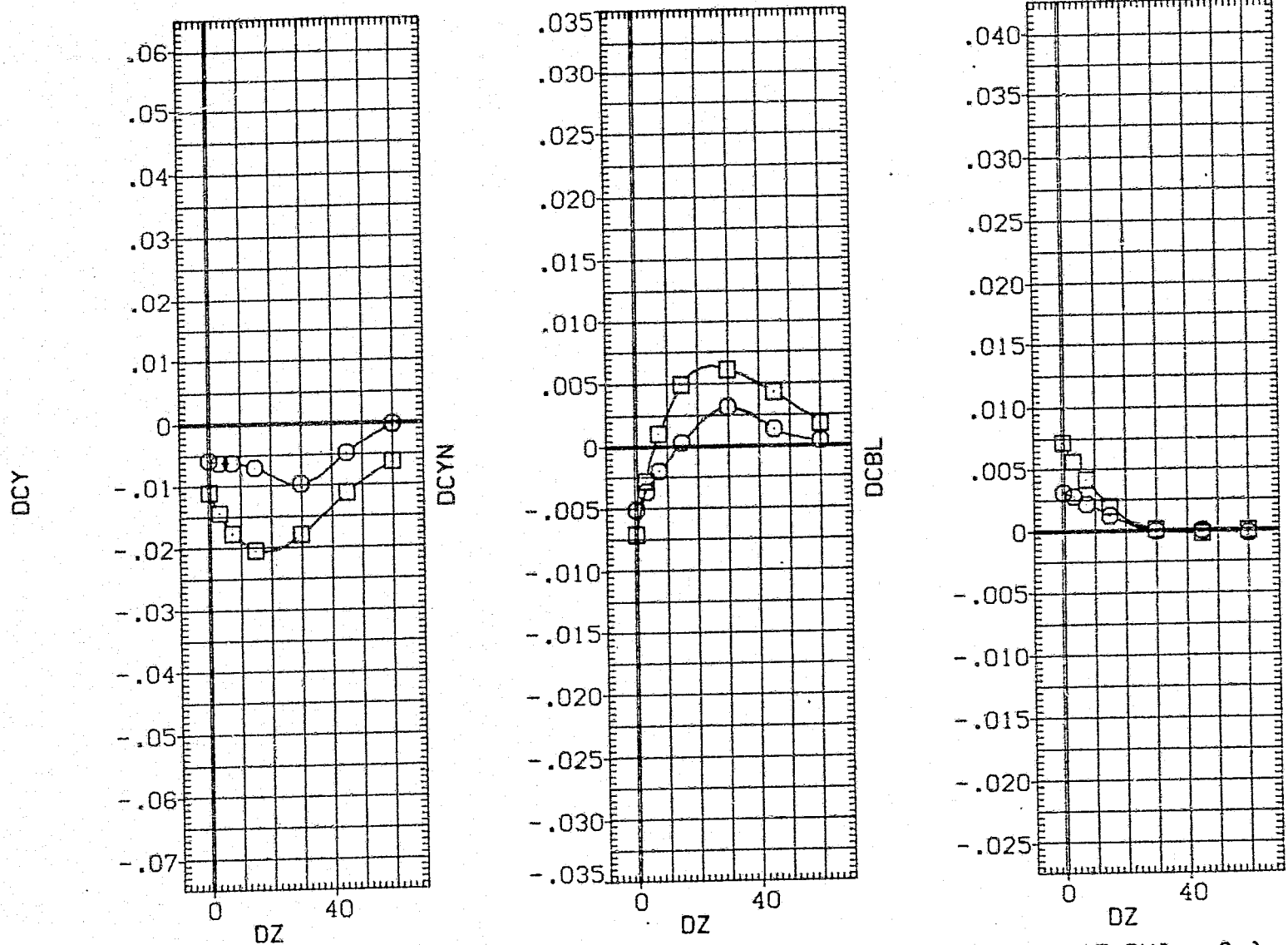


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	8.000	BETAC	.000
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

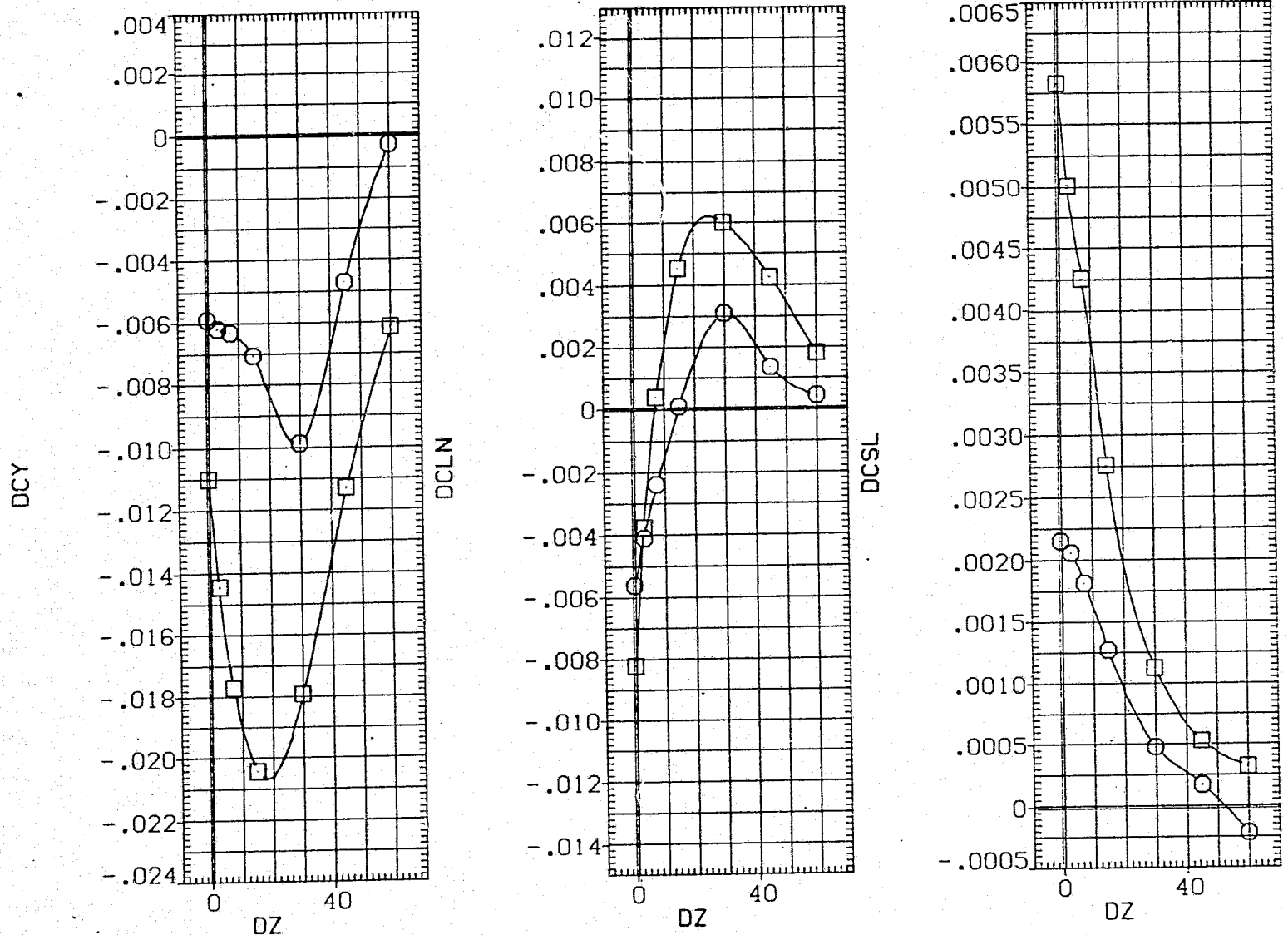


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

CA20 747/1 01 S1

CARRIER DATA (MGN072)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

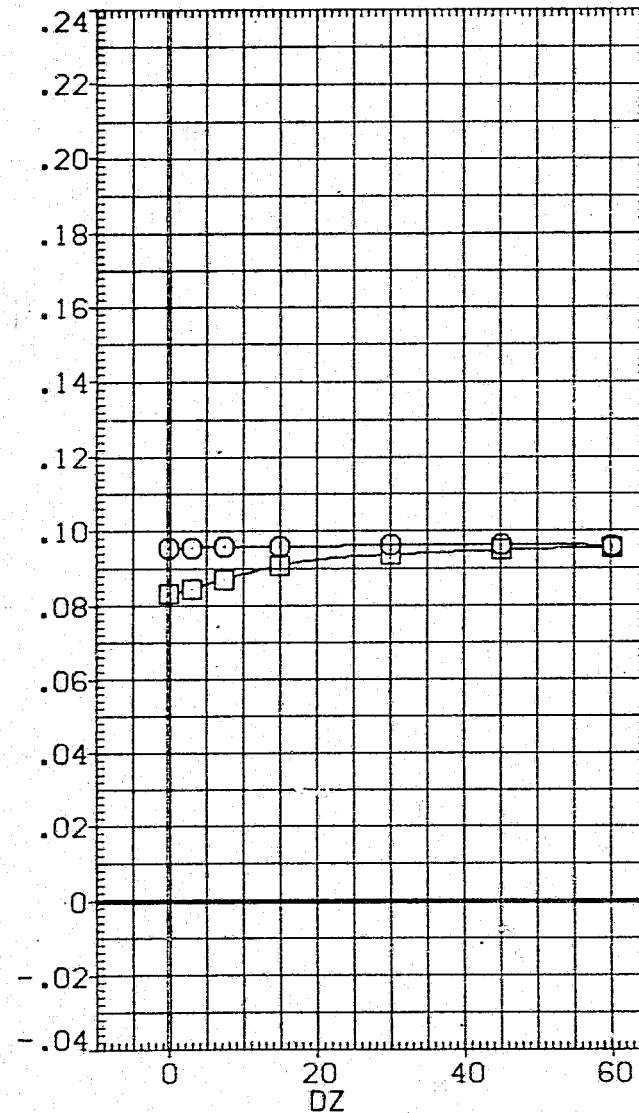
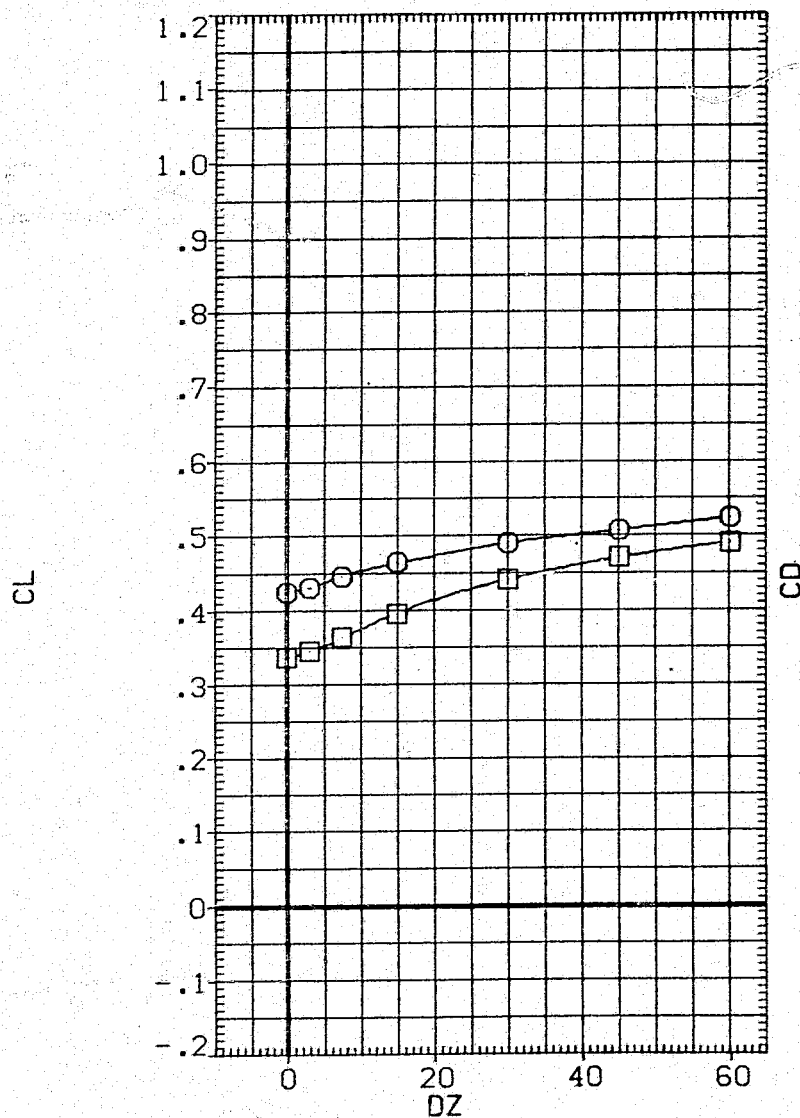


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000
14.000

ELV-1B
ELEVON
BETA0
PHI
DX

PARAMETRIC VALUES

.000 ELV-0B 3.000
5.000 MACH .600
.000 BETAC 5.000
.000 DY 10.000
.000 ALPHAC 4.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2346.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

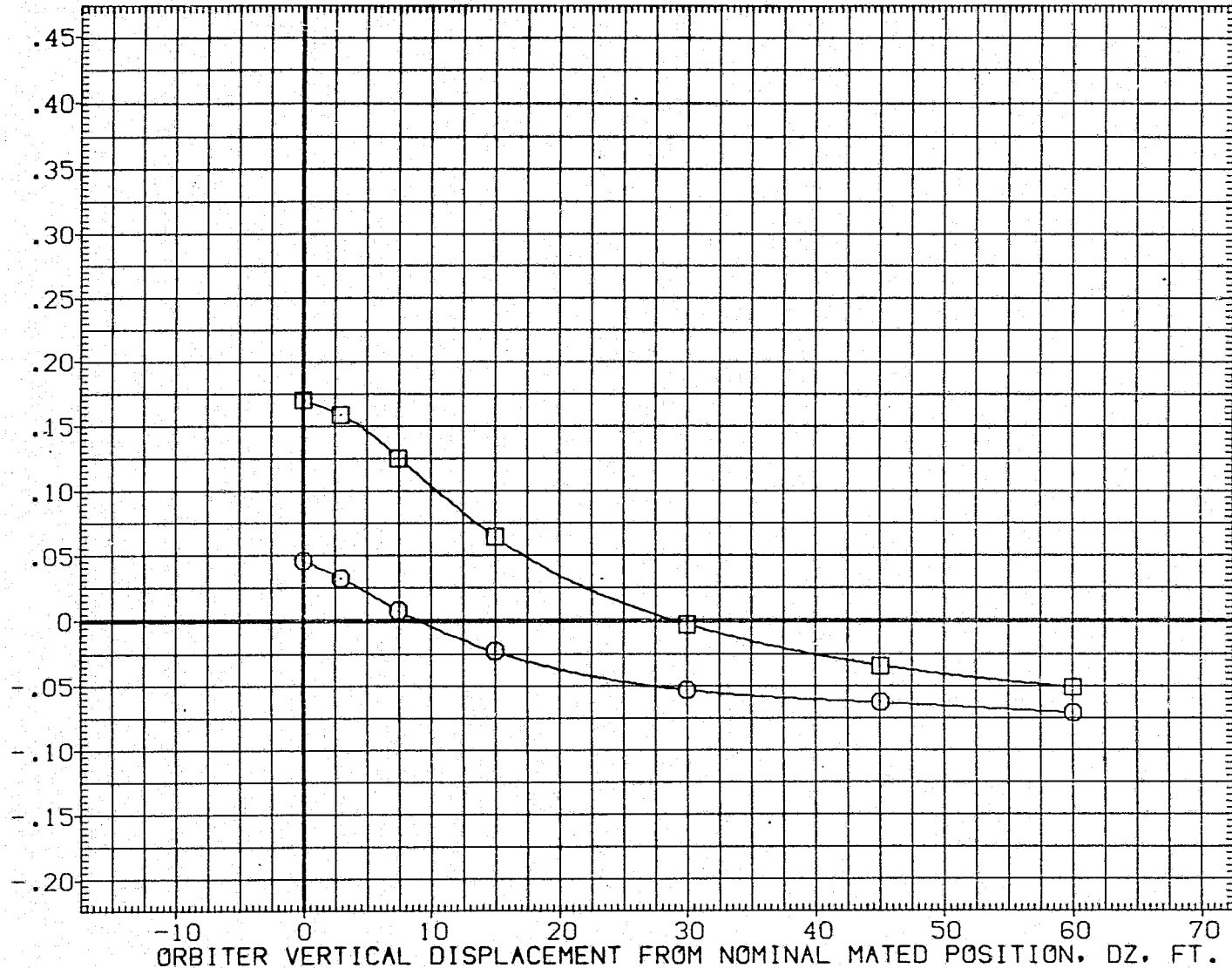


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000		3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

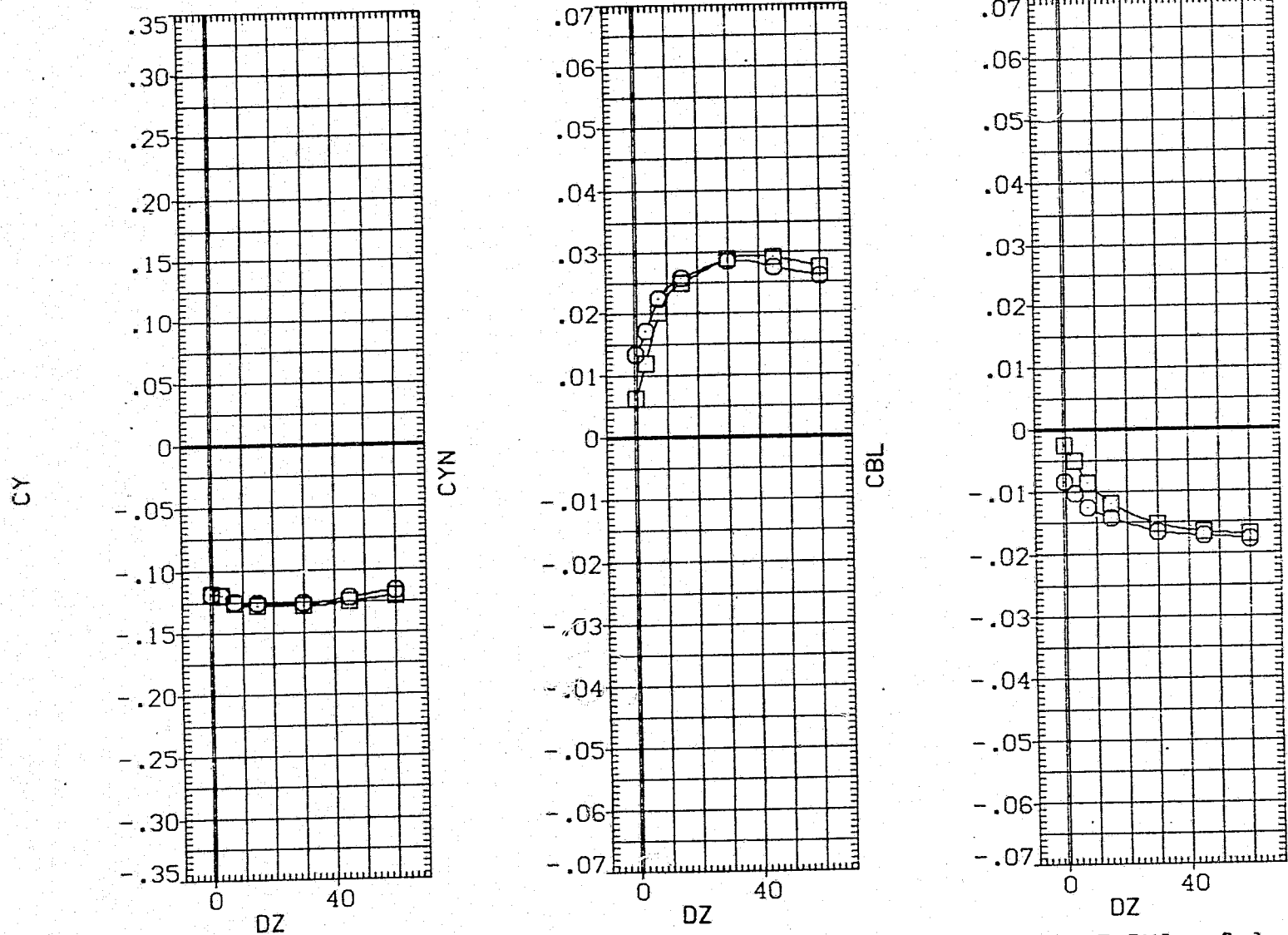


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC	VALUES	ELV-0B
○	10.000		.000		3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

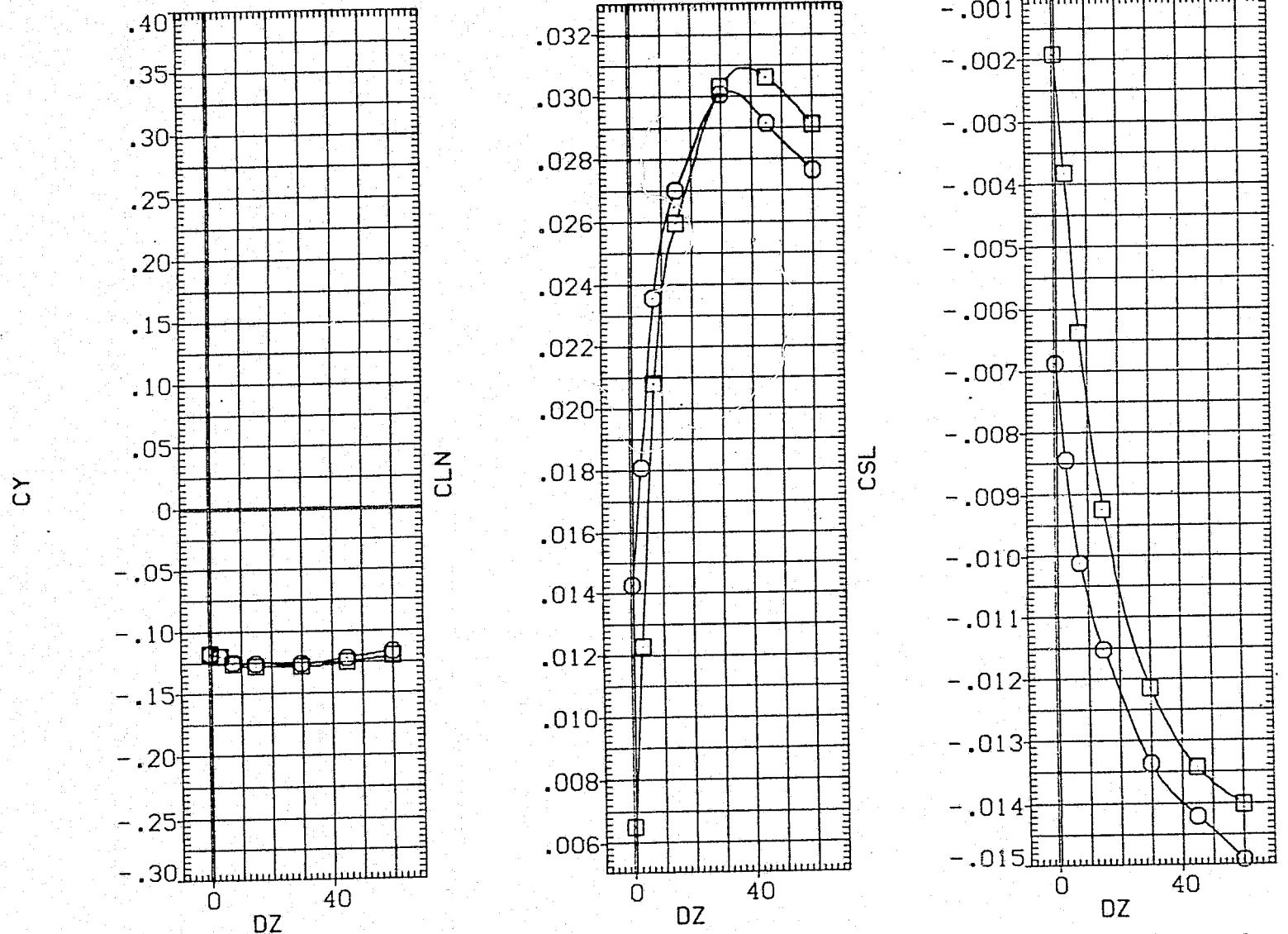


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

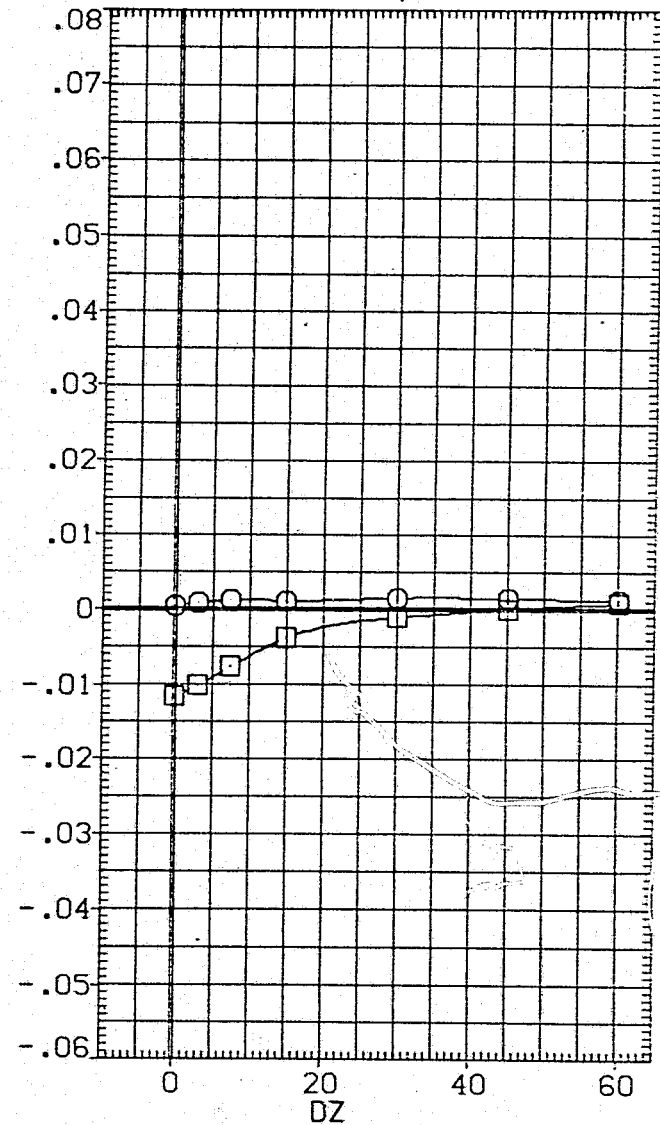
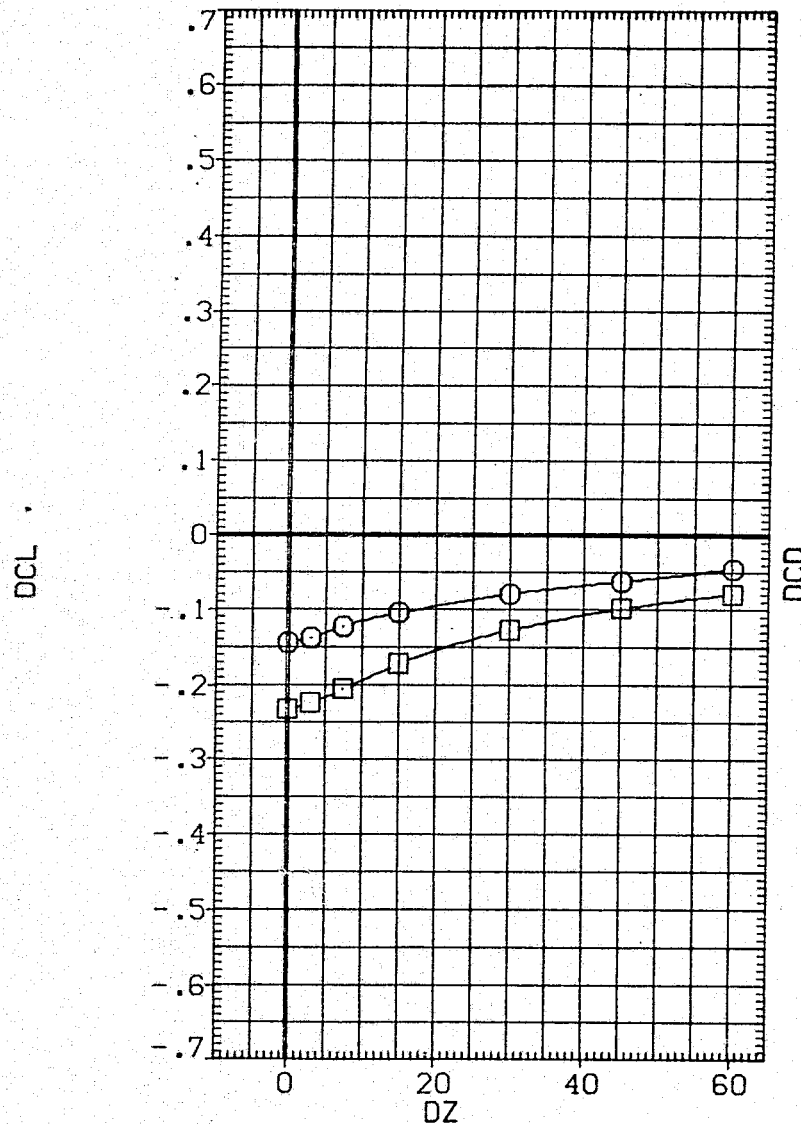


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC 5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX .000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SD.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

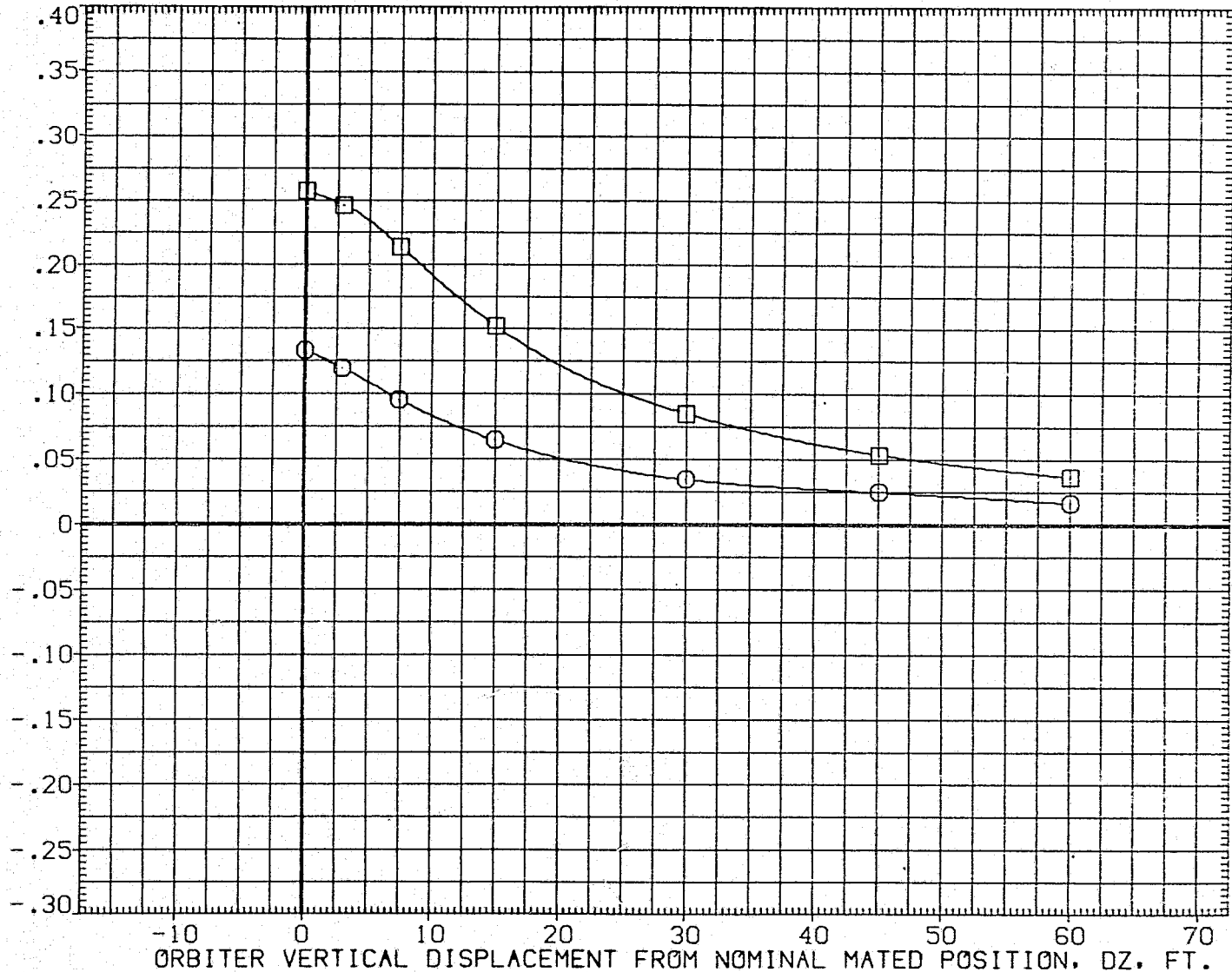


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC 5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX .000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

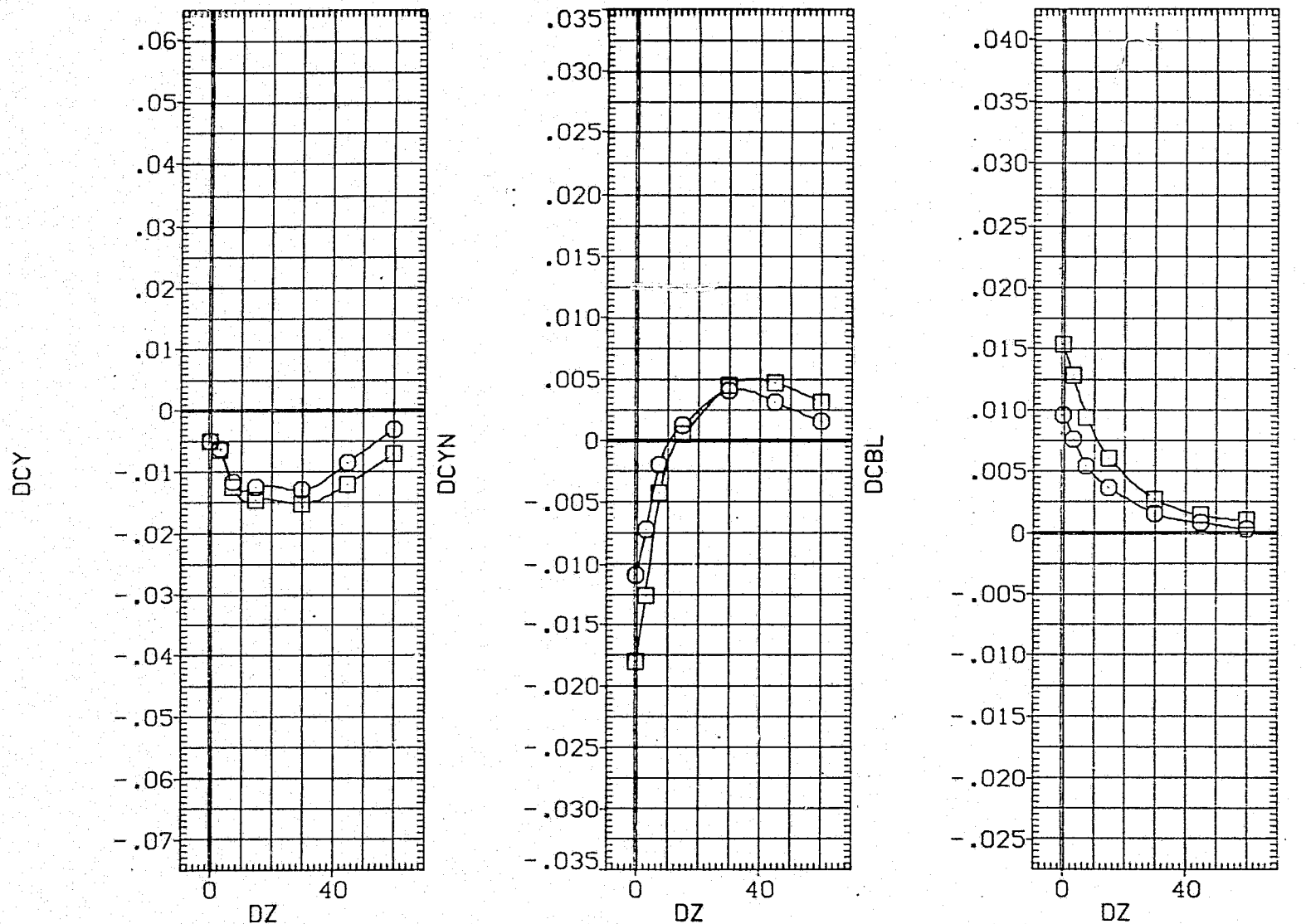


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC 4.000	BETAC 5.000
□	14.000	ELV-1B .000	ELV-0B 3.000
		ELEVON 5.000	MACH .600
		PHI .000	DX .000
		DY 10.000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

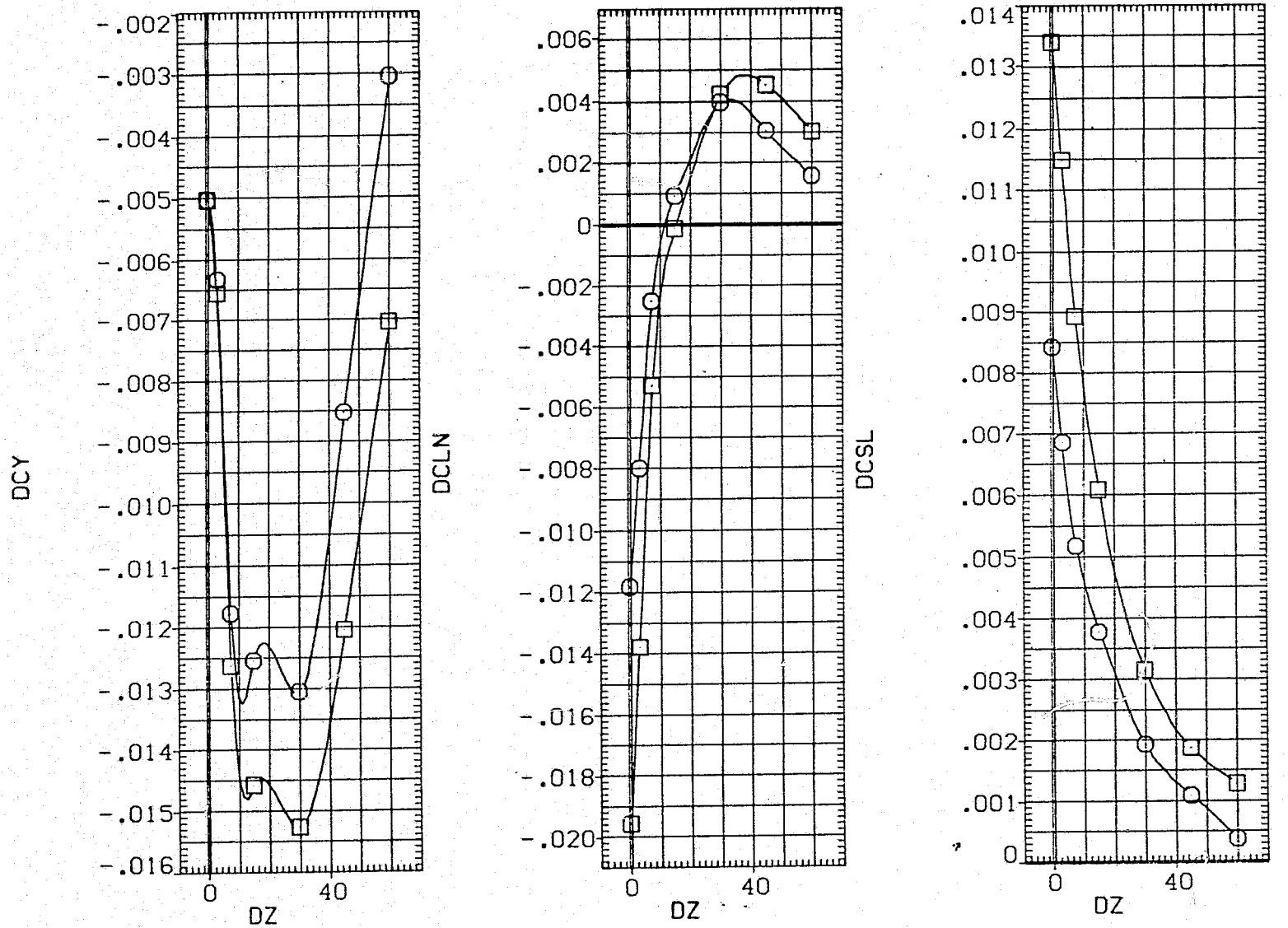


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	180.8000	IN.ZC
SCALE	.0300	

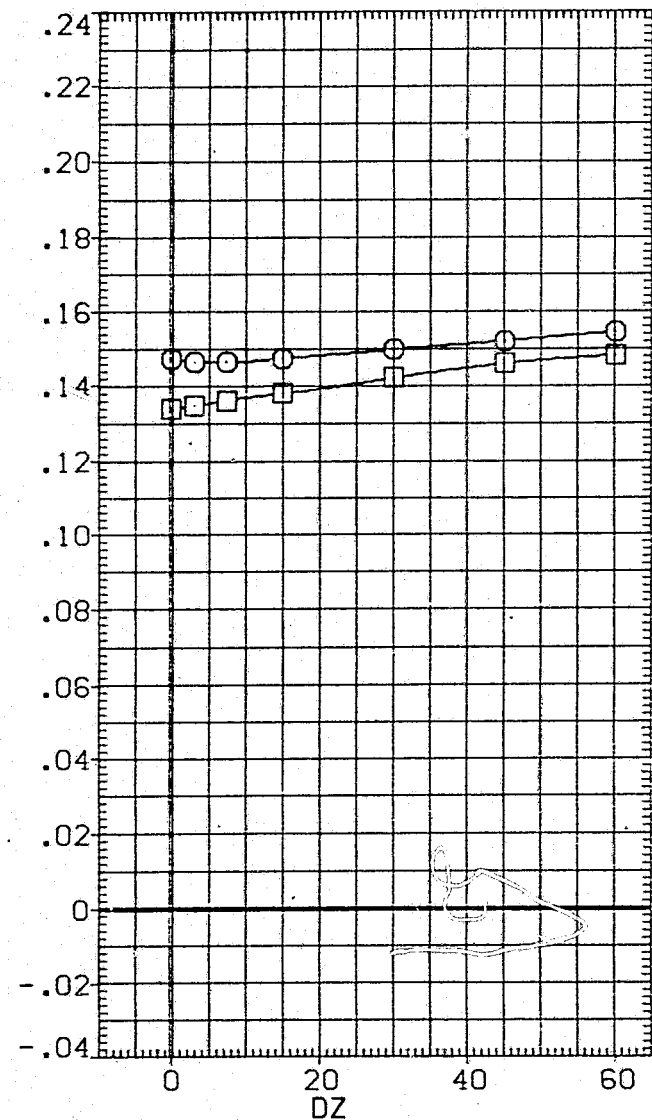
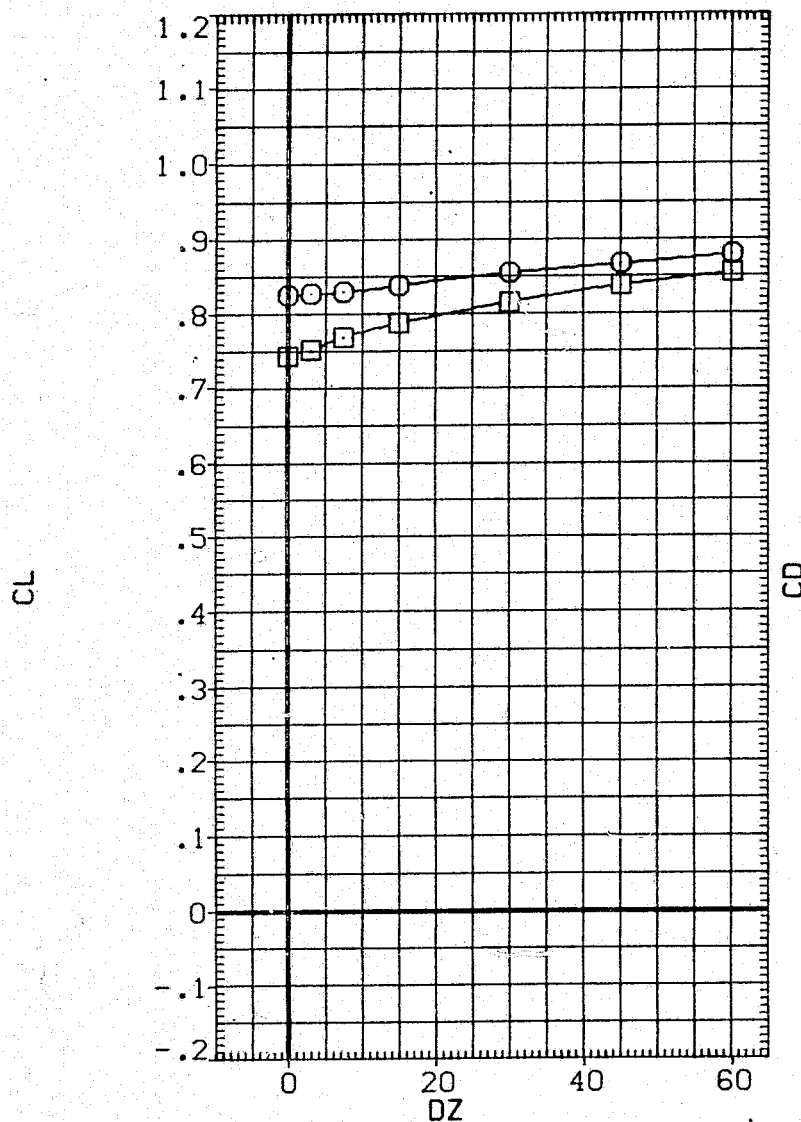


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

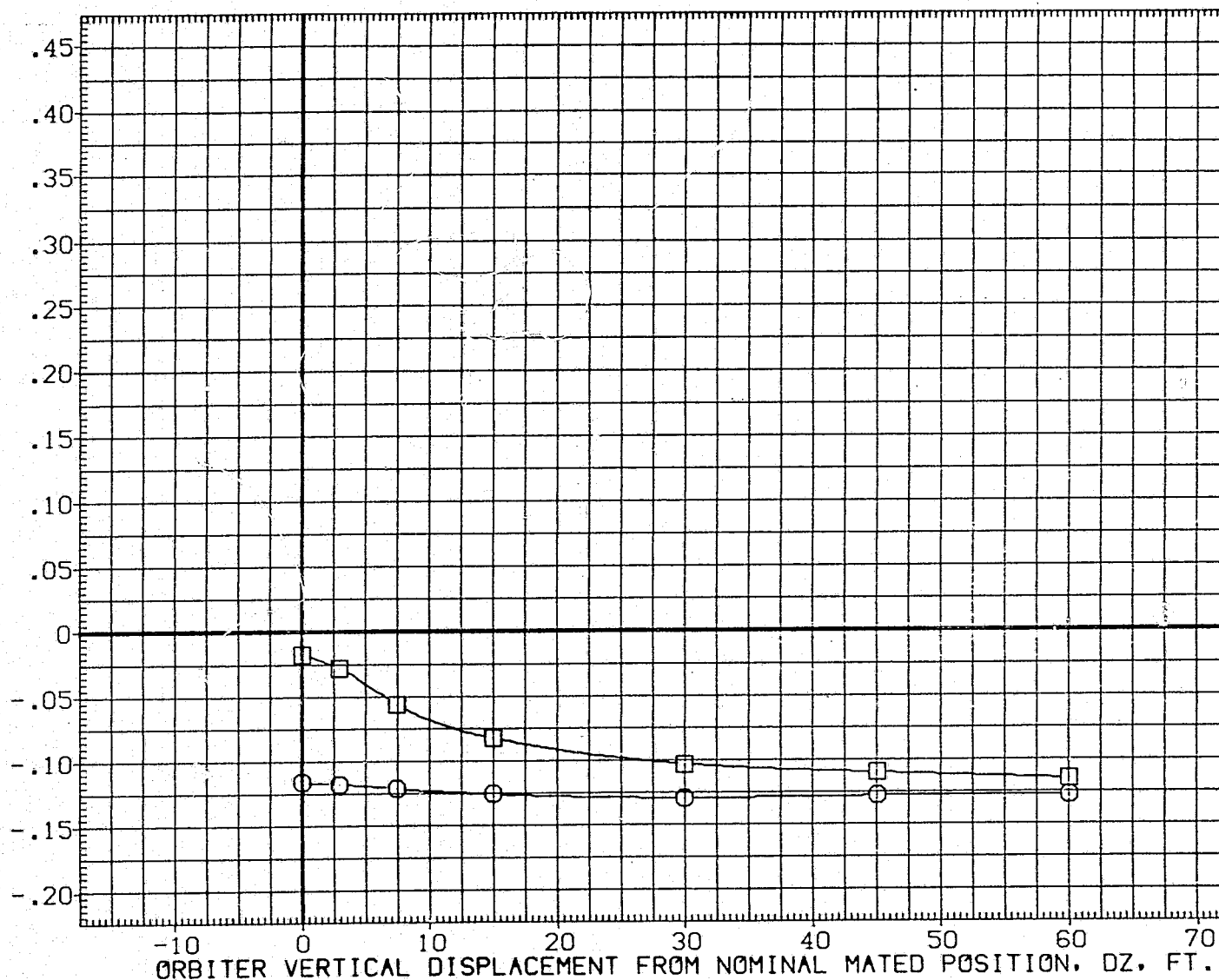


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-18	PARAMETRIC VALUES	ELV-08	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	5.000
		PHI	.000	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

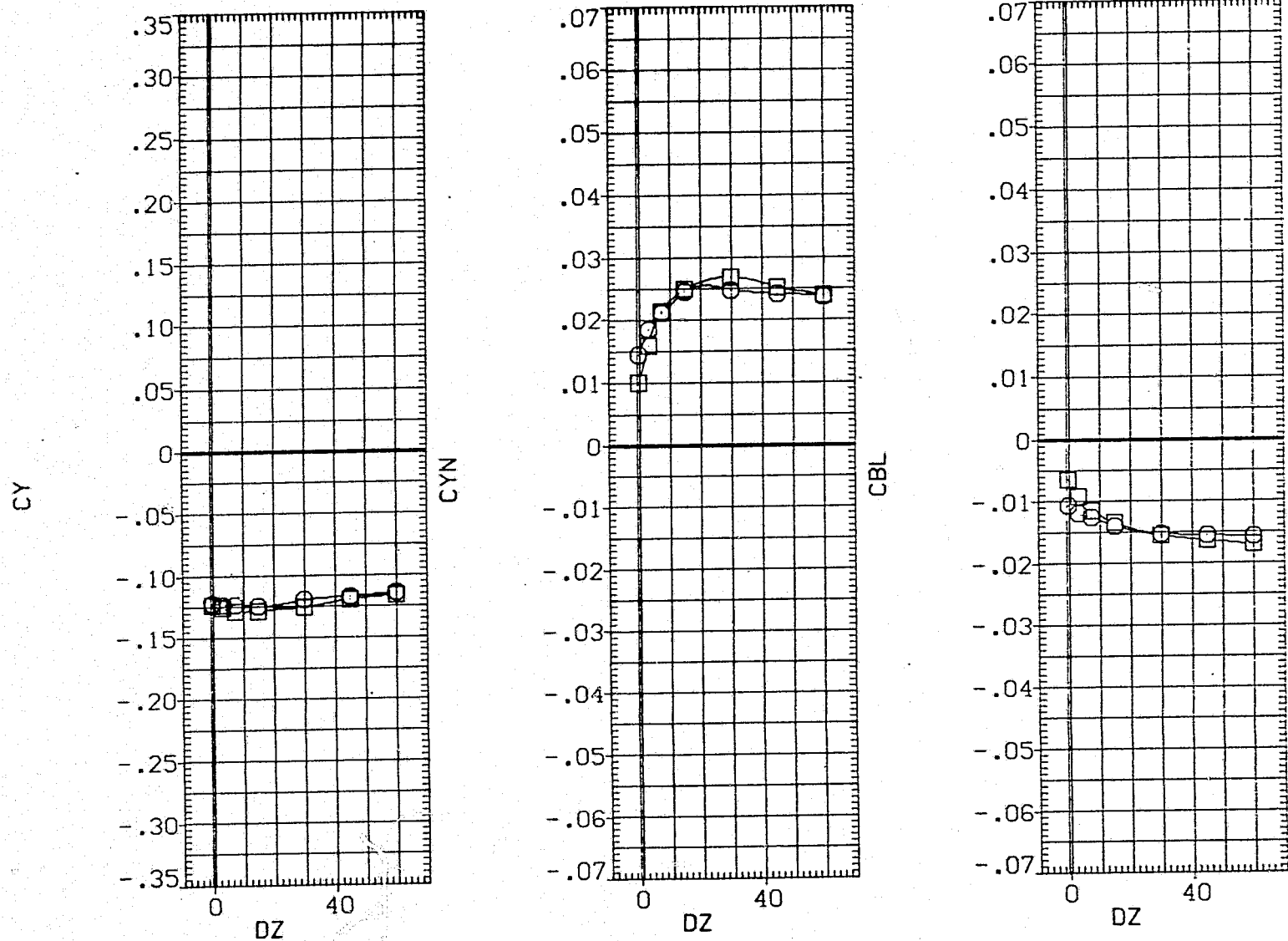


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	ELV-18	PARAMETRIC VALUES	ELV-08
○	10.000	ELEVON	.000	MACH
□	14.000	BETA0	.000	BETAC
		PHI	.000	DY
		DX	.000	ALPHAC

3.000
.600
5.000
10.000
8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

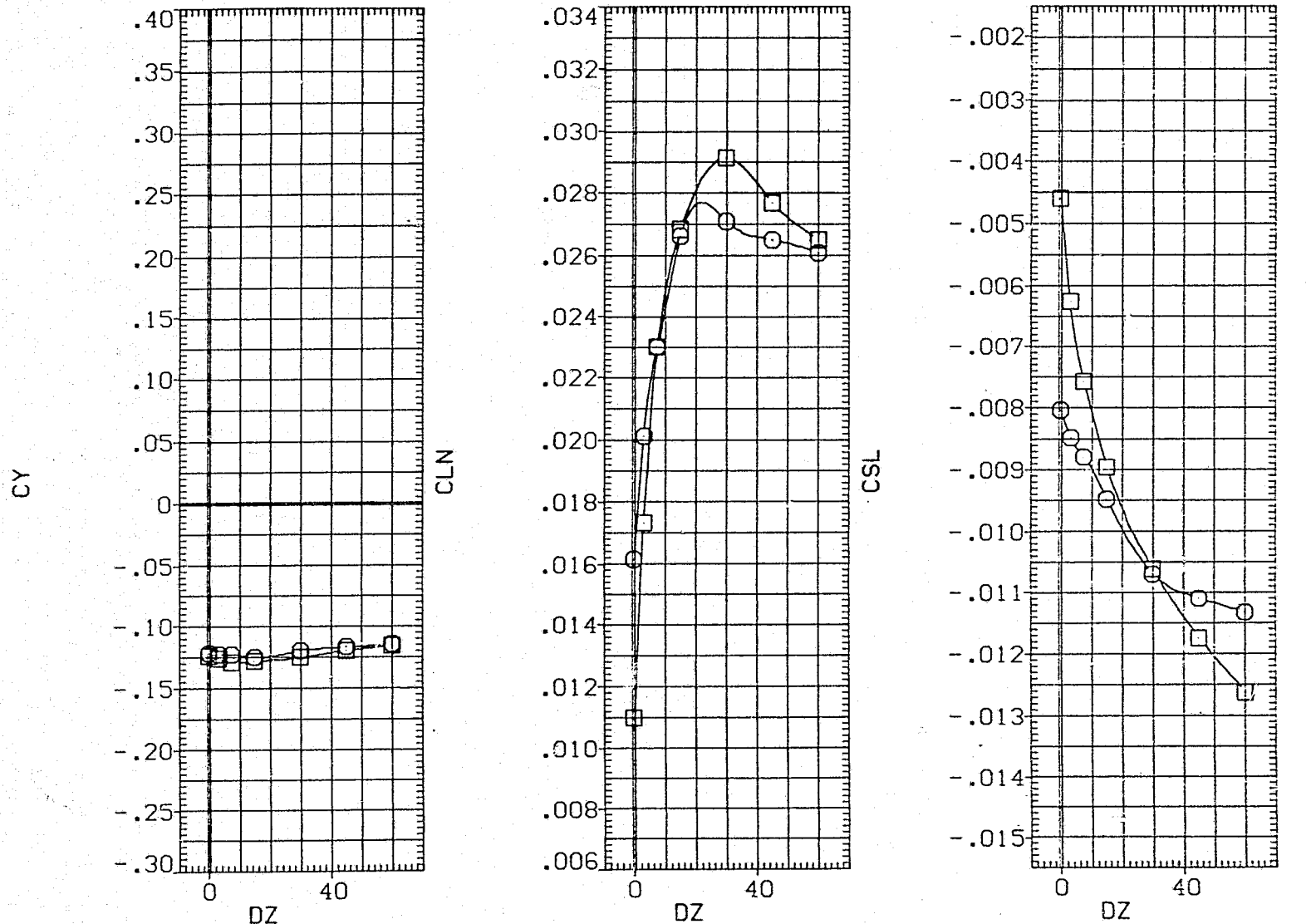


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

.000

10.000

BETAC

ELV-0B

MACH

DX

BETA0

5.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

DCL

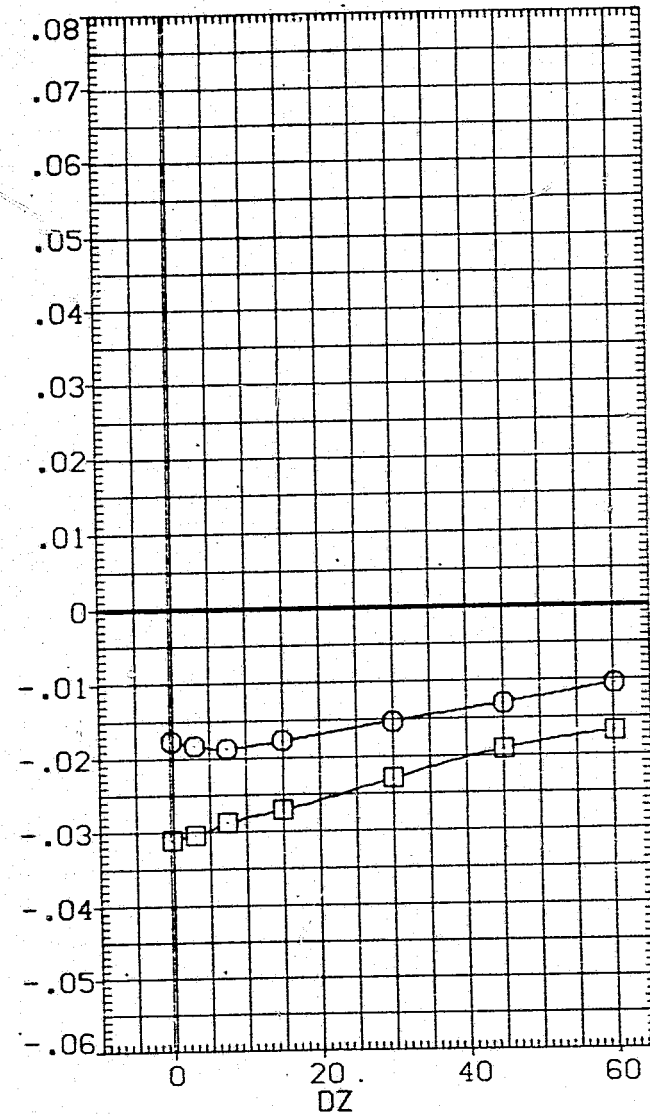
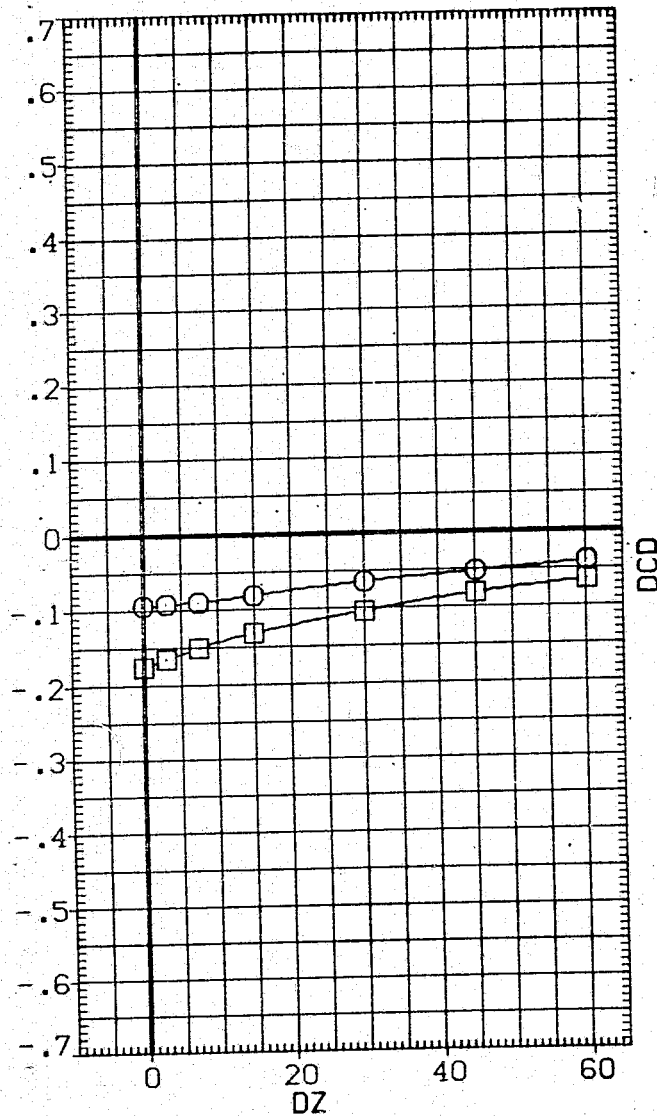


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
RREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

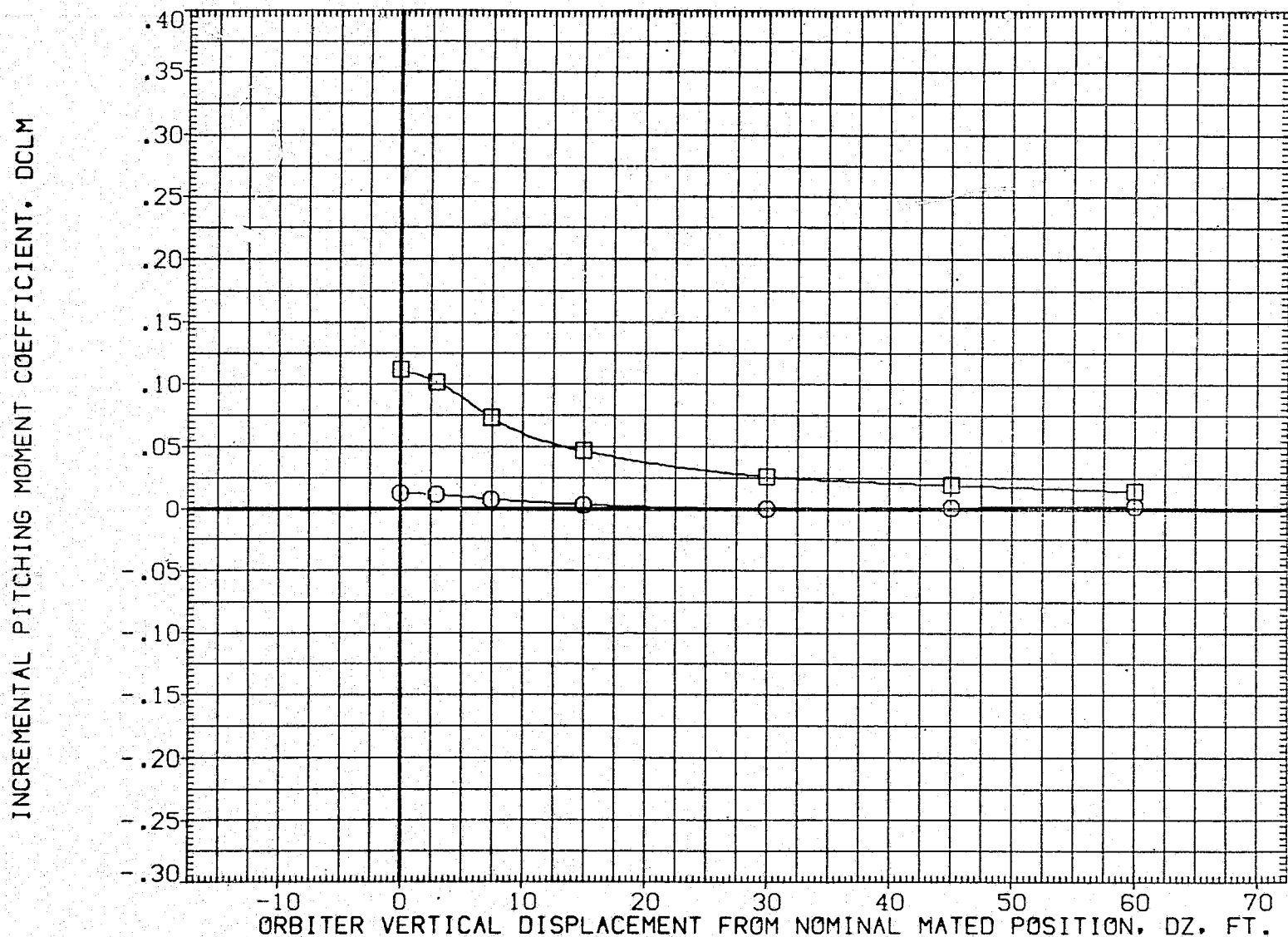


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

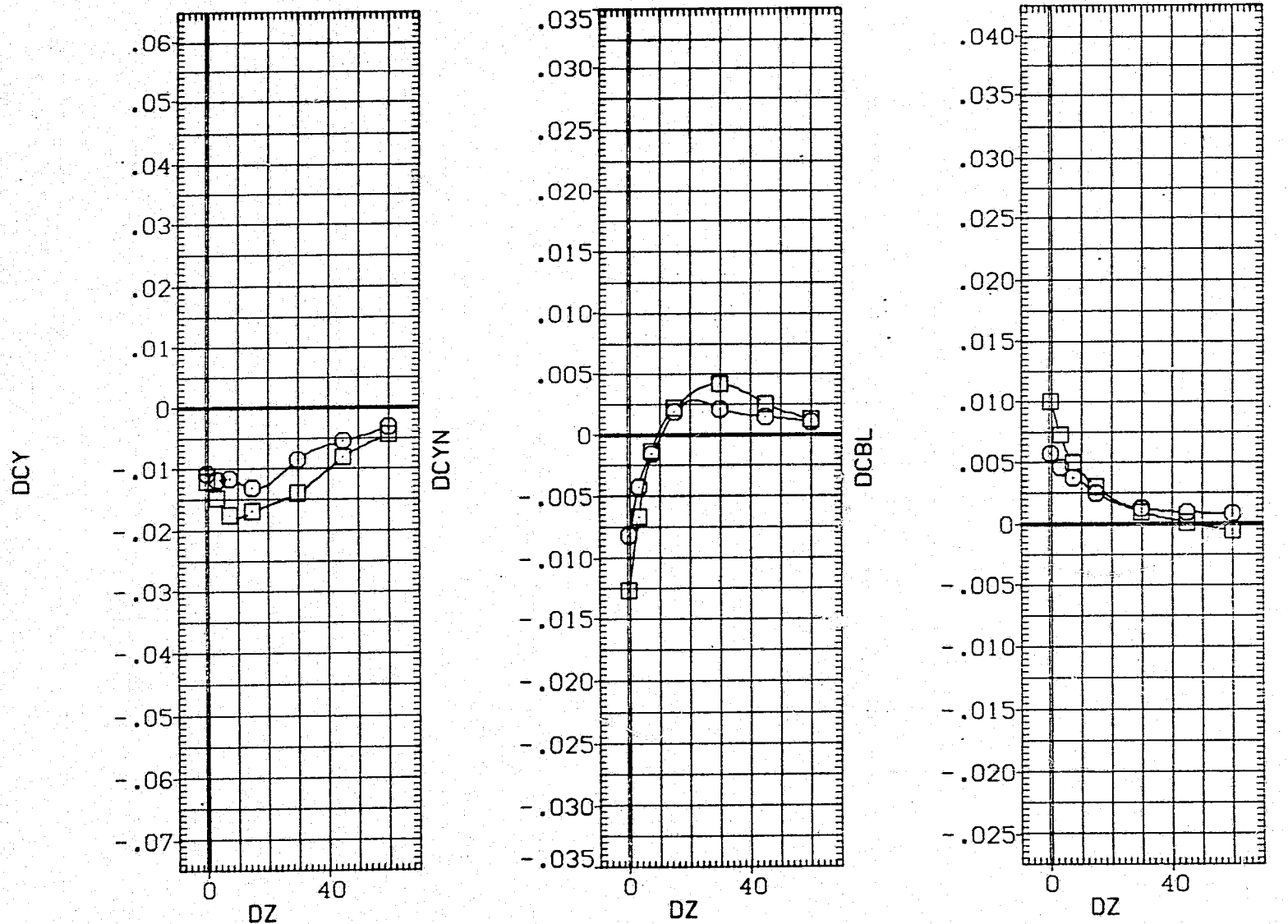


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC 5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX .000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

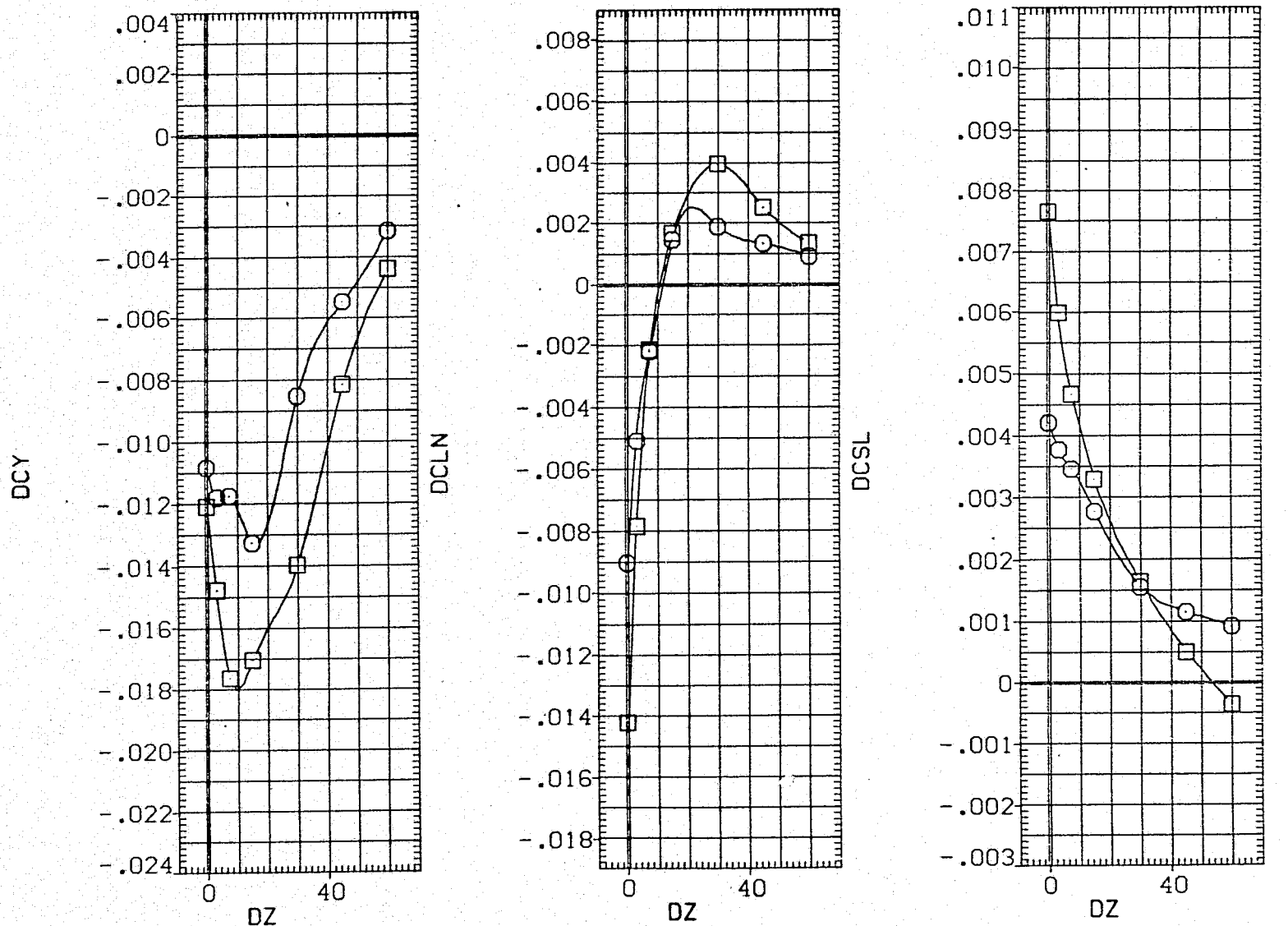


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-1B

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

.000

10.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

5.000

10.000

4.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

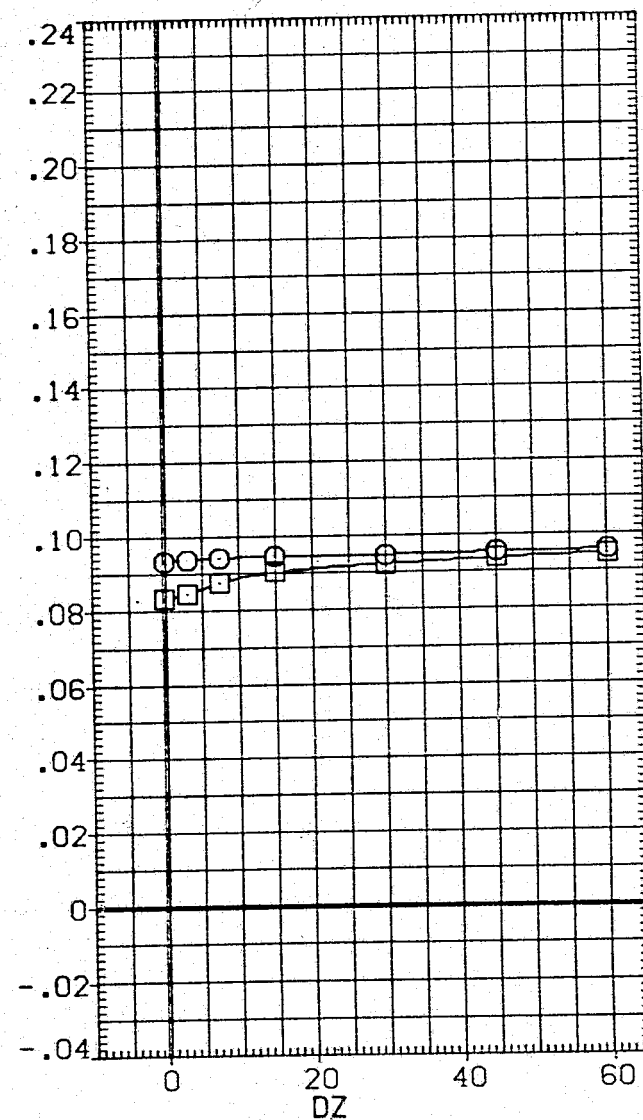
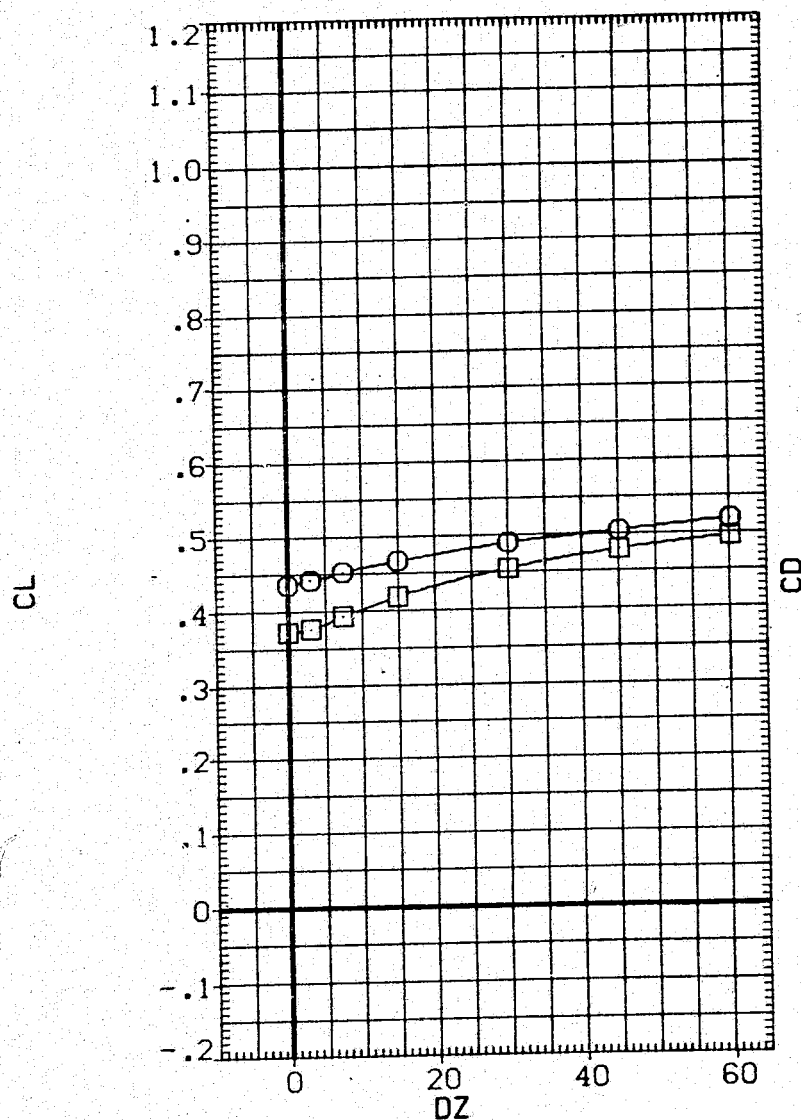


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEV0N	5.000	MACH	.600
		BETA0	.000	BETAC	5.000
		PHI	.000	DY	10.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

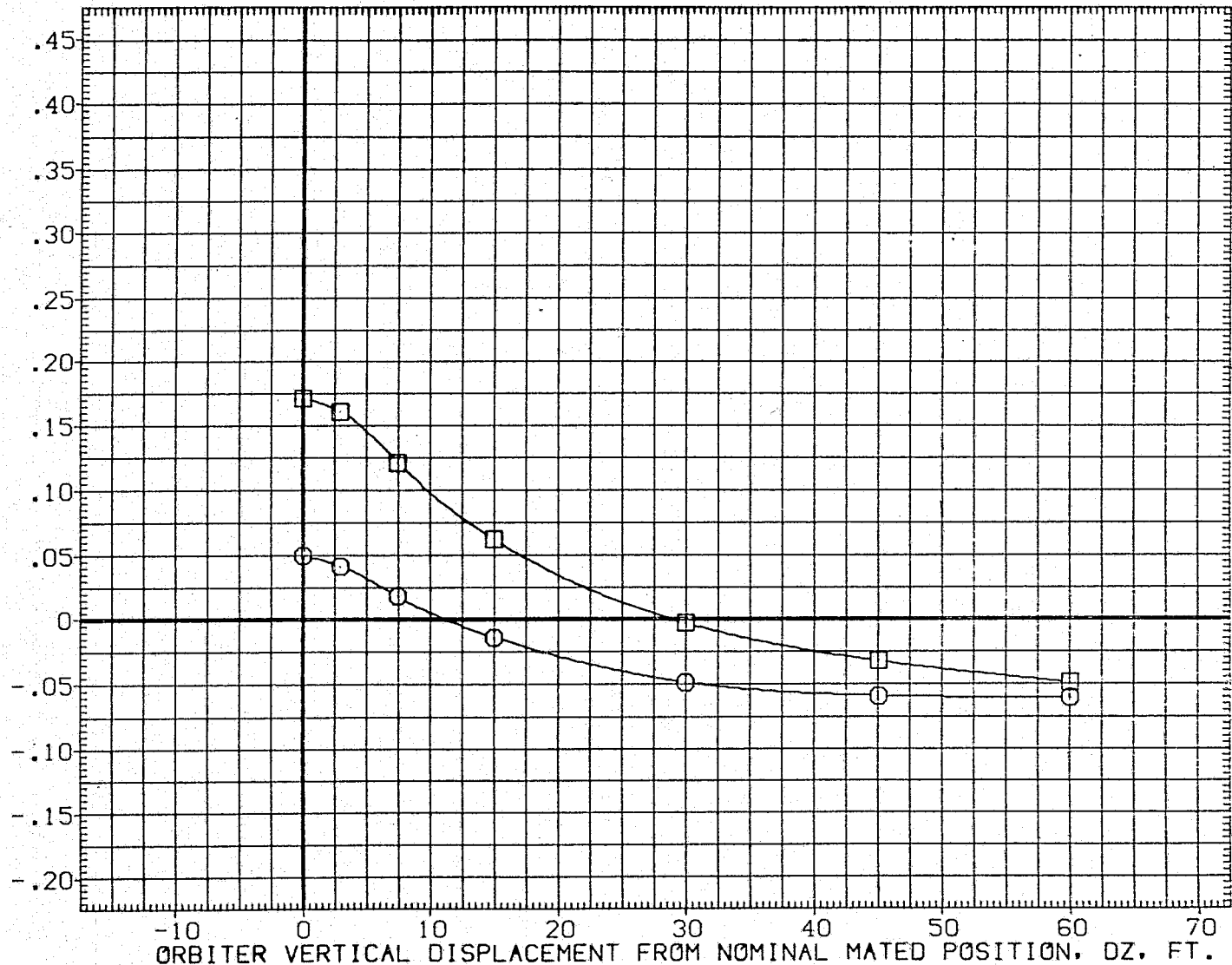


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	5.000
		PHI	.000	DY	10.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

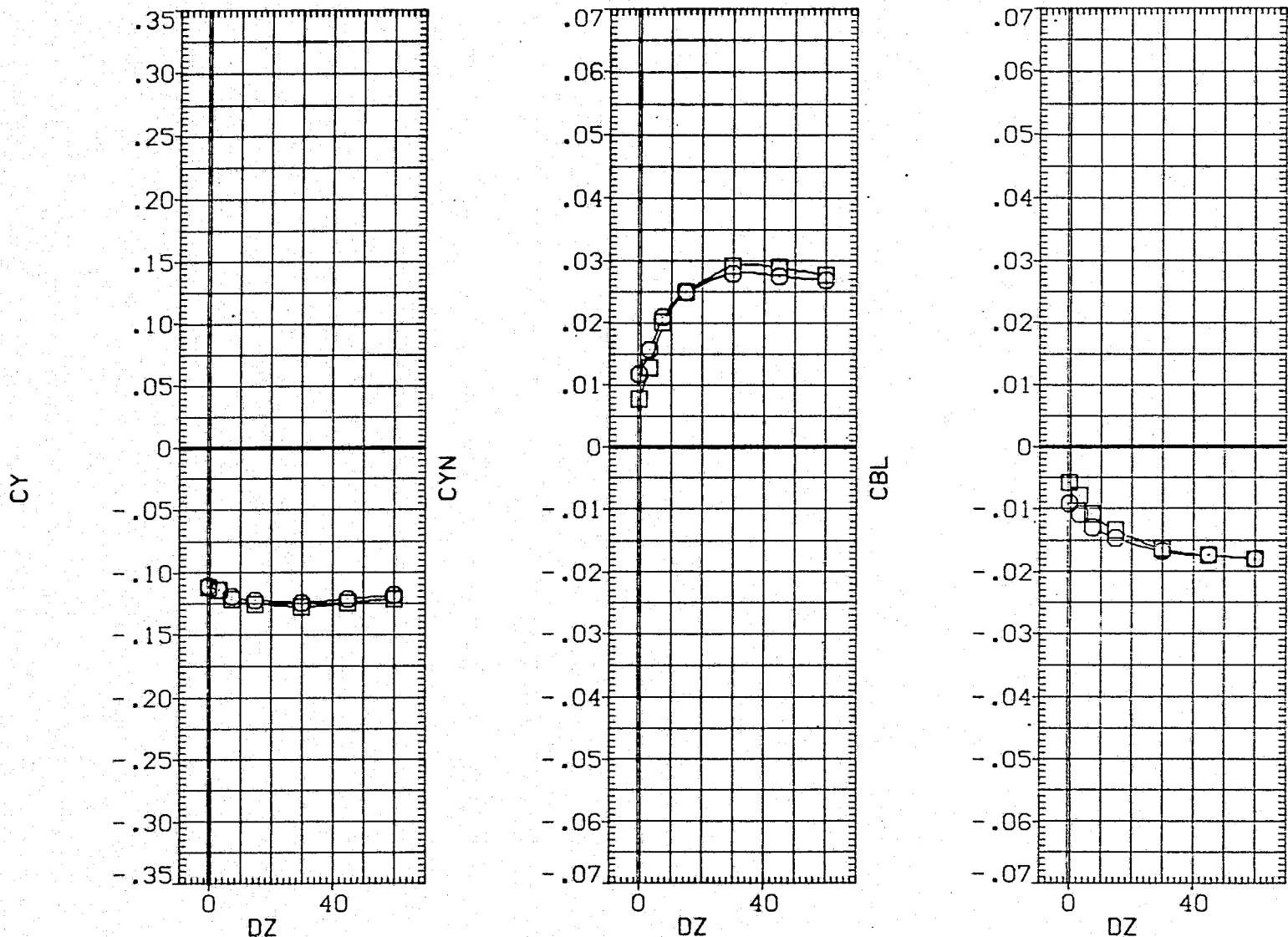


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-IB .000 ELV-OB 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC 5.000
		PHI .000 DY 10.000
		DX 10.000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

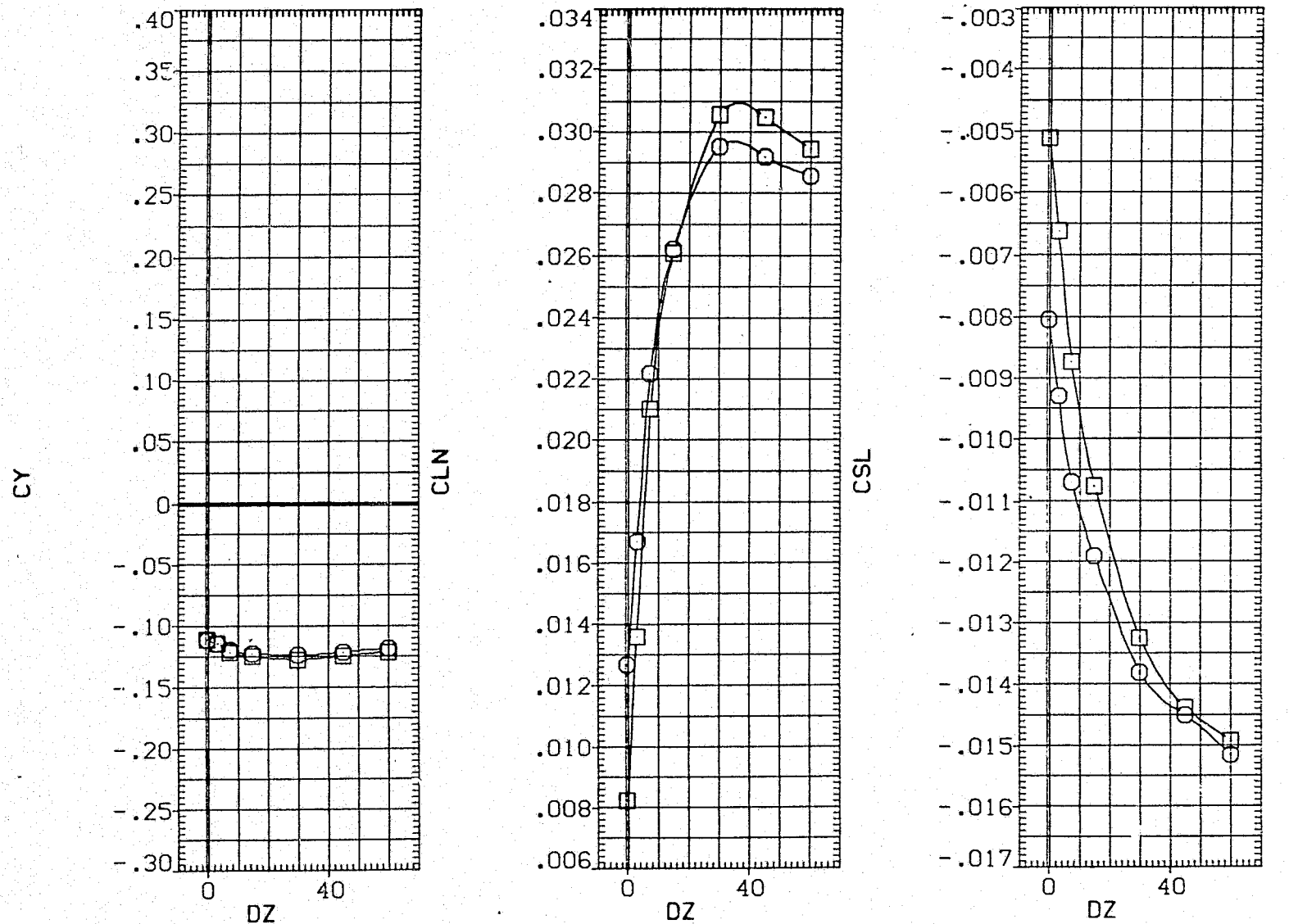


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC 5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

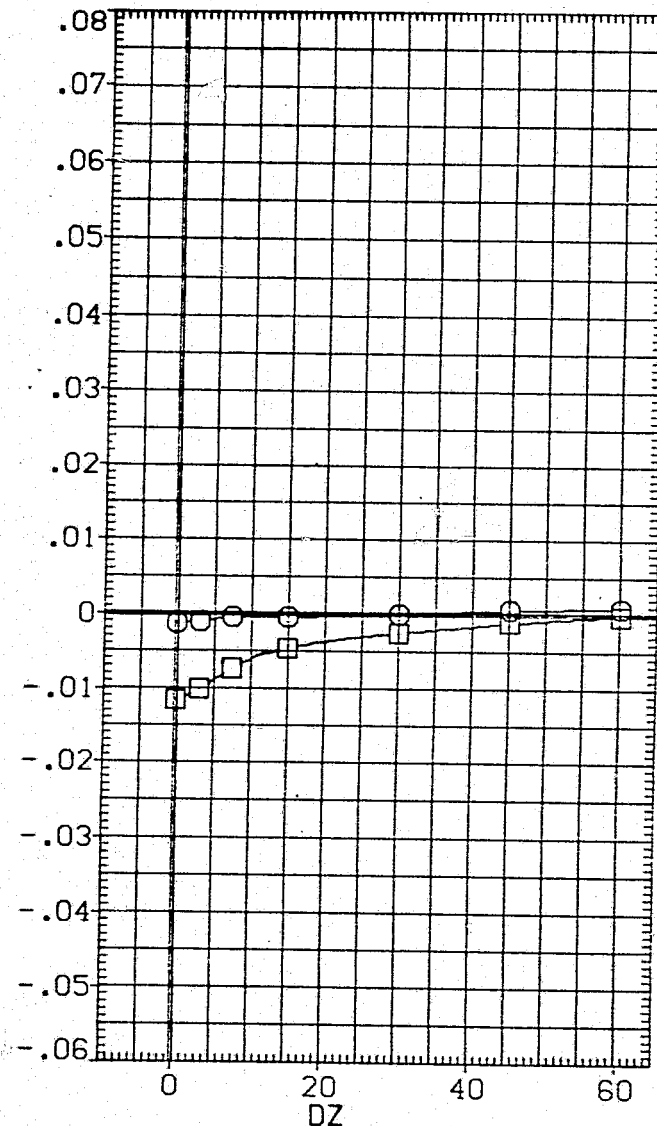
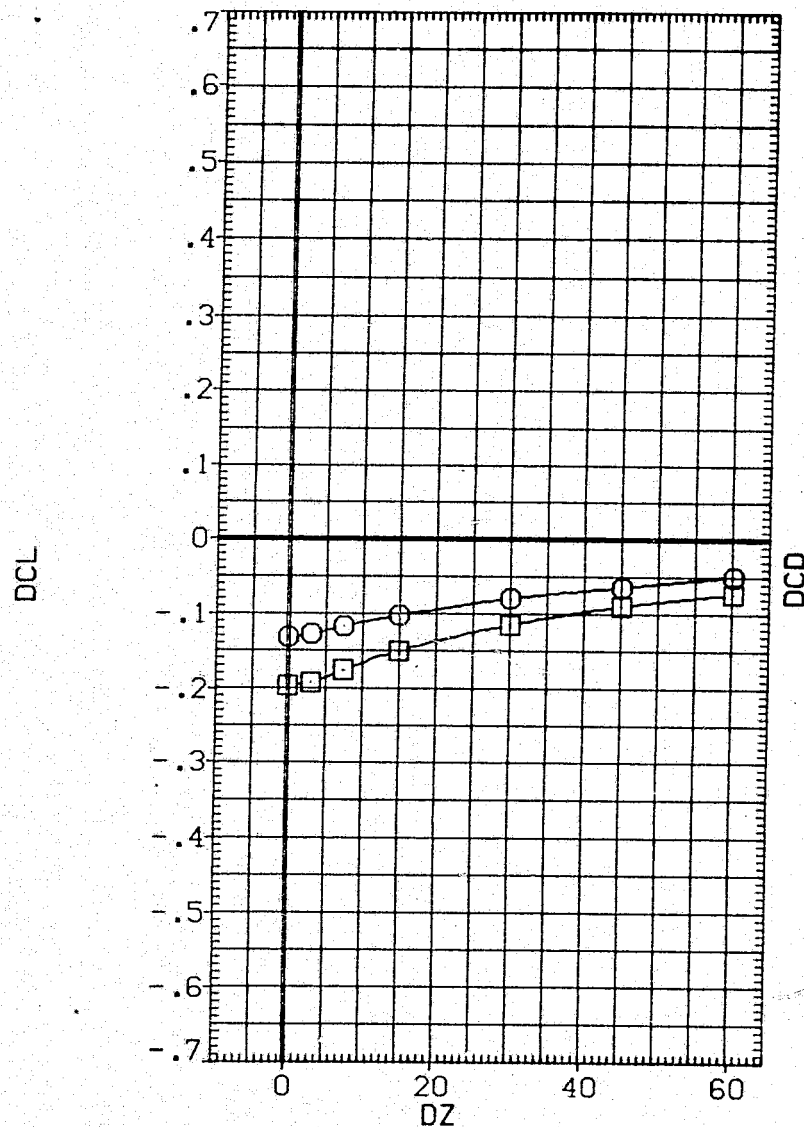


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL
○
□

ALPHA0
10.000
14.000

PARAMETRIC VALUES
ALPHA0 4.000 BETAC 5.000
ELV-IB .000 ELV-OB 3.000
ELEVON 5.000 MACH .600
PHI .000 DX 10.000
DY 10.000 BETA0 .000

REFERENCE INFORMATION
SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM



FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC 5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

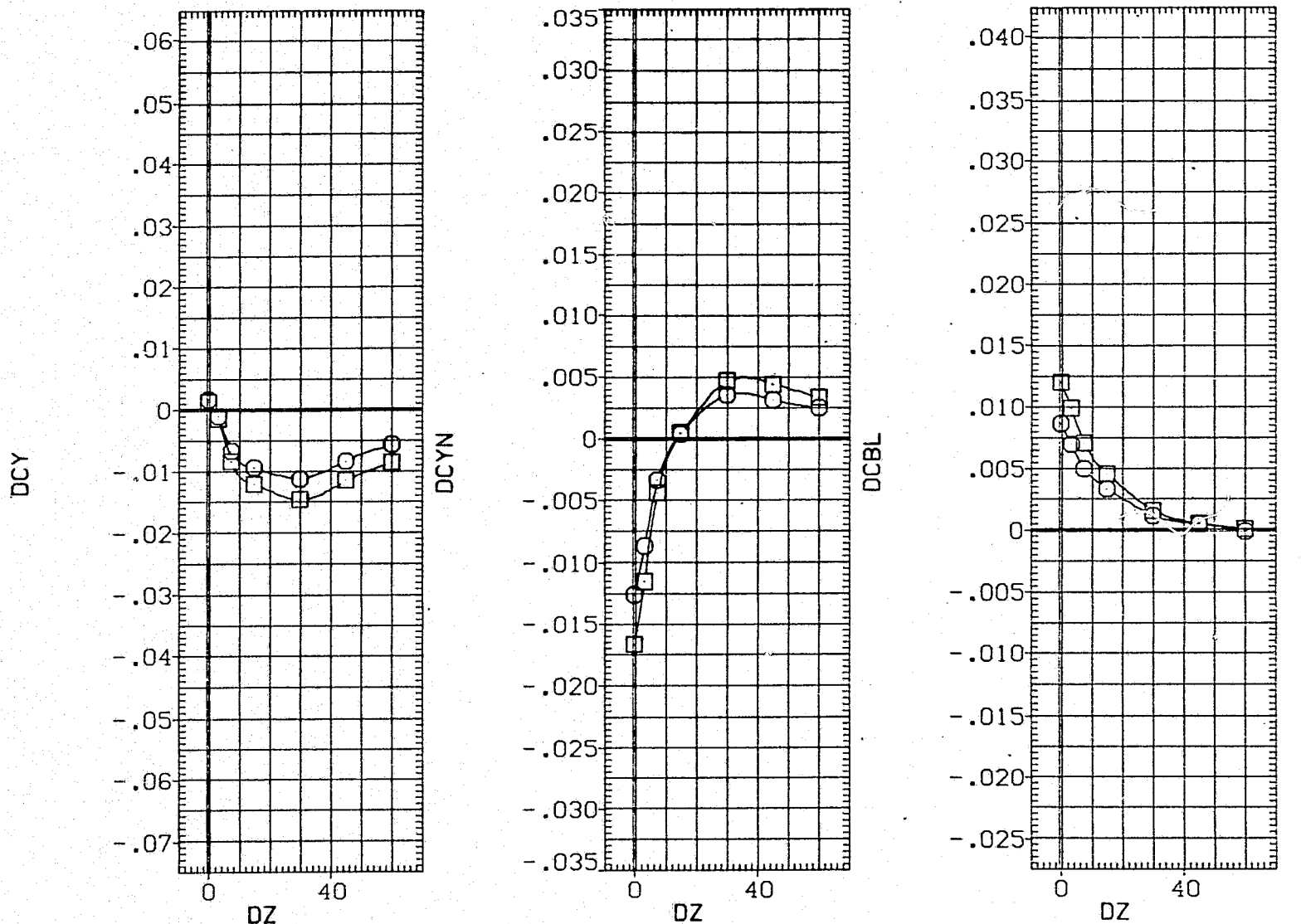


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC 5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETAO .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

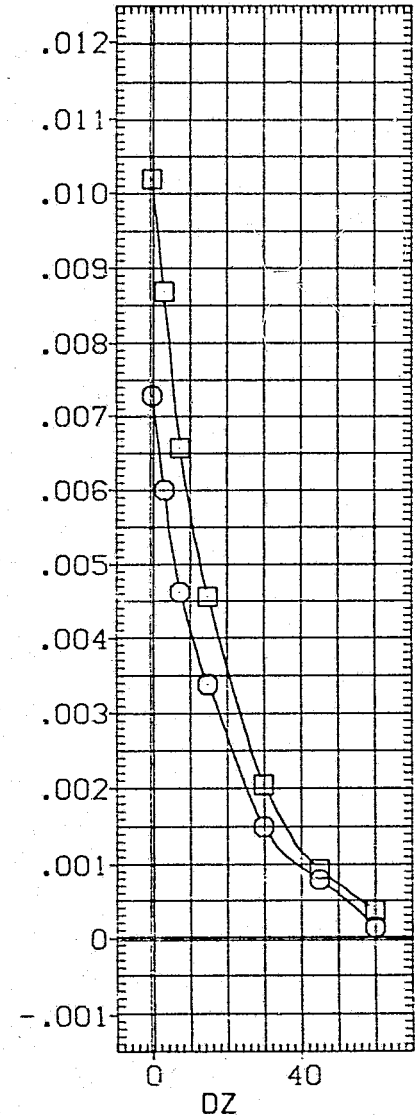
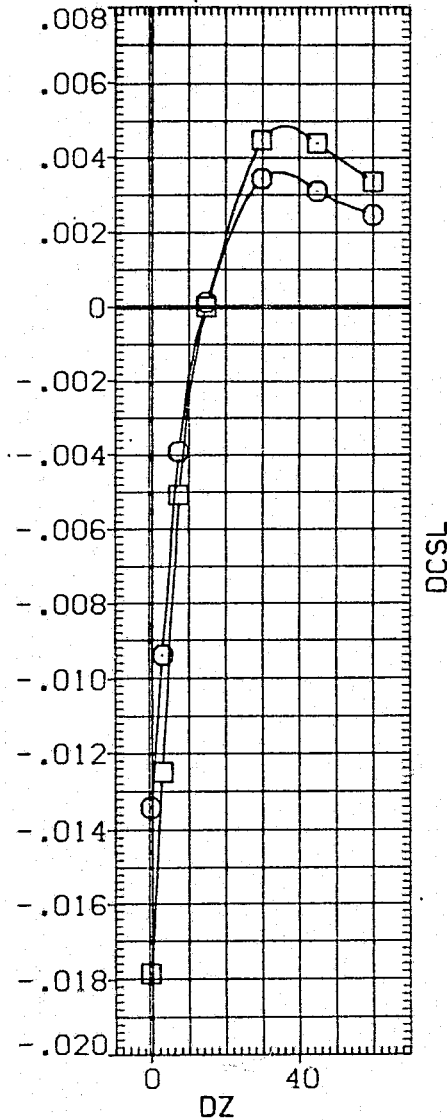
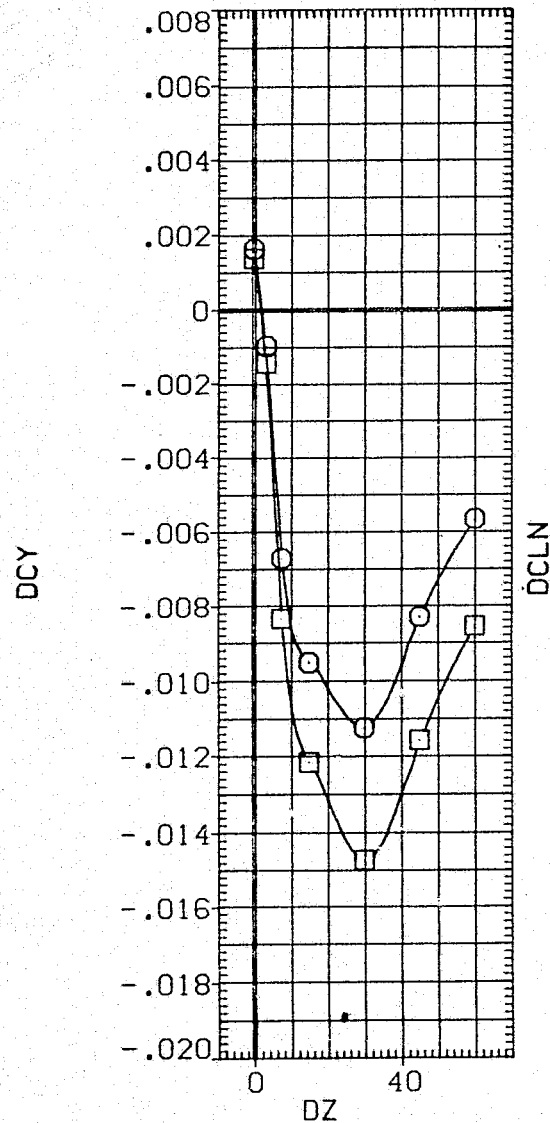


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL



ALPHA0

10.000

14.000

ELV-18

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

.000

10.000

ELV-08

MACH

BETAC

DY

ALPHAC

3.000

.600

5.000

10.000

8.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

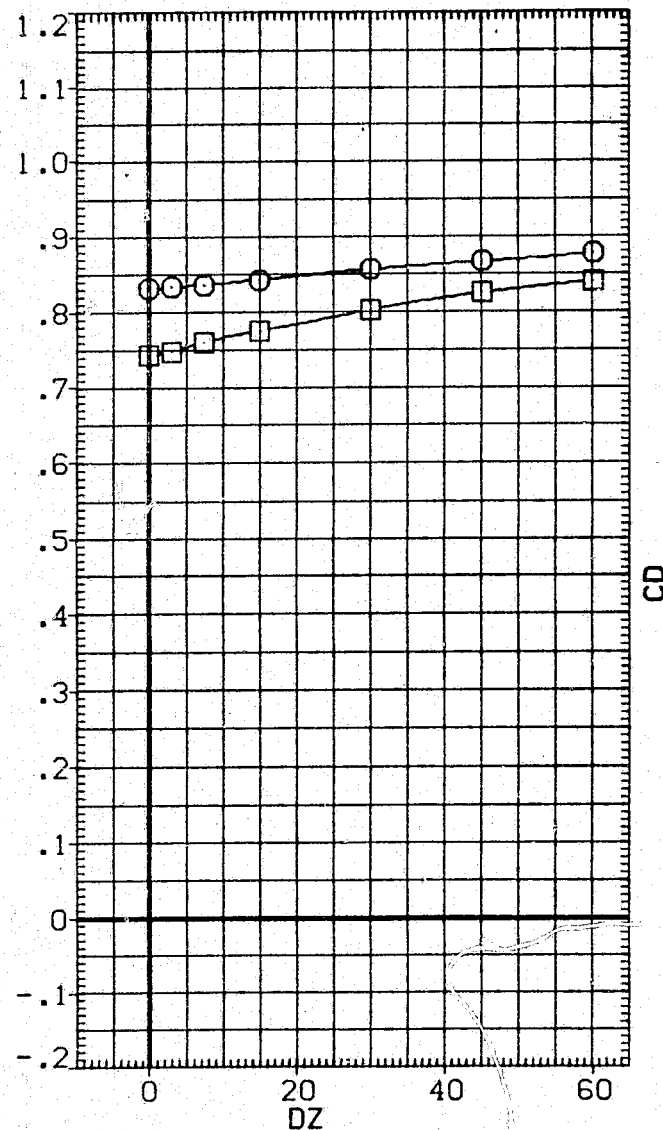
190.8000

IN.ZC

SCALE

.0300

CL



CD

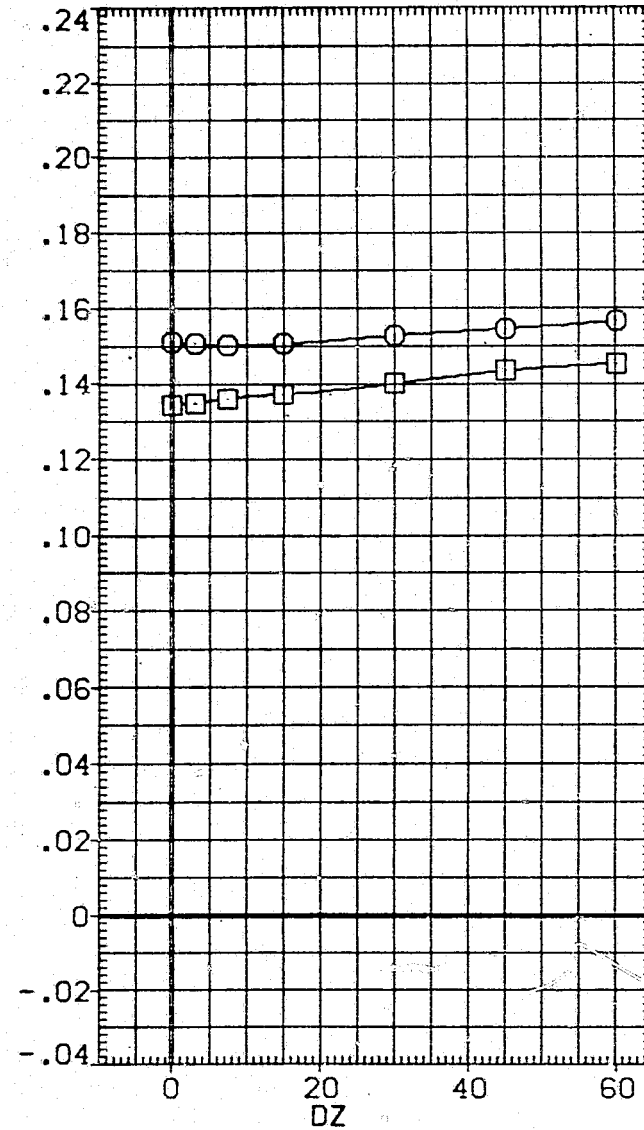


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-IB

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

.000

10.000

ELV-OB

MACH

BETAC

DY

ALPHAC

3.000

.600

5.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

PITCHING MOMENT COEFFICIENT, CLM

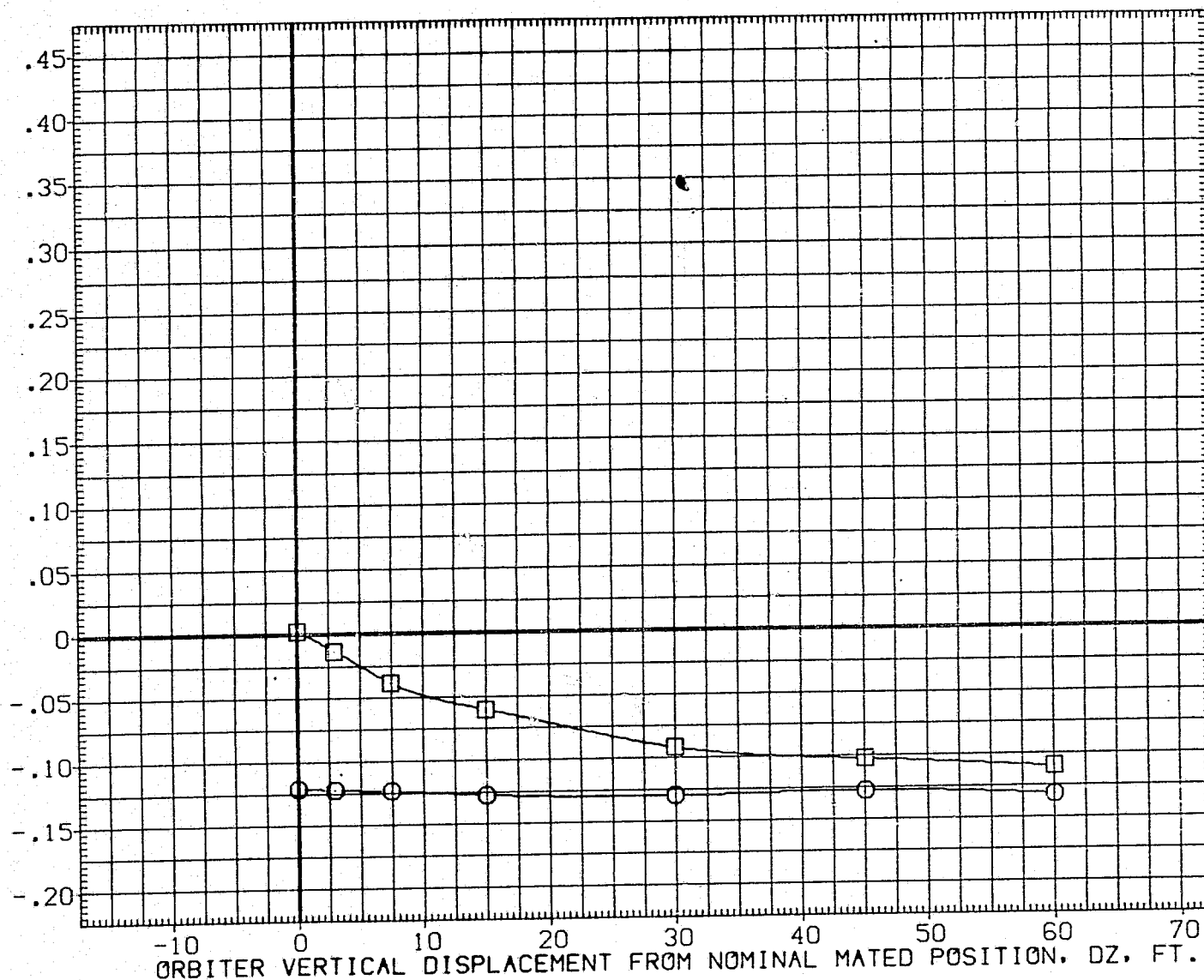


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ELV-1B .000	ELV-0B 3.000
□	14.000	ELEVON 5.000	MACH .600
		BETA0 .000	BETAC 5.000
		PHI .000	DX 10.000
		DX 10.000	ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

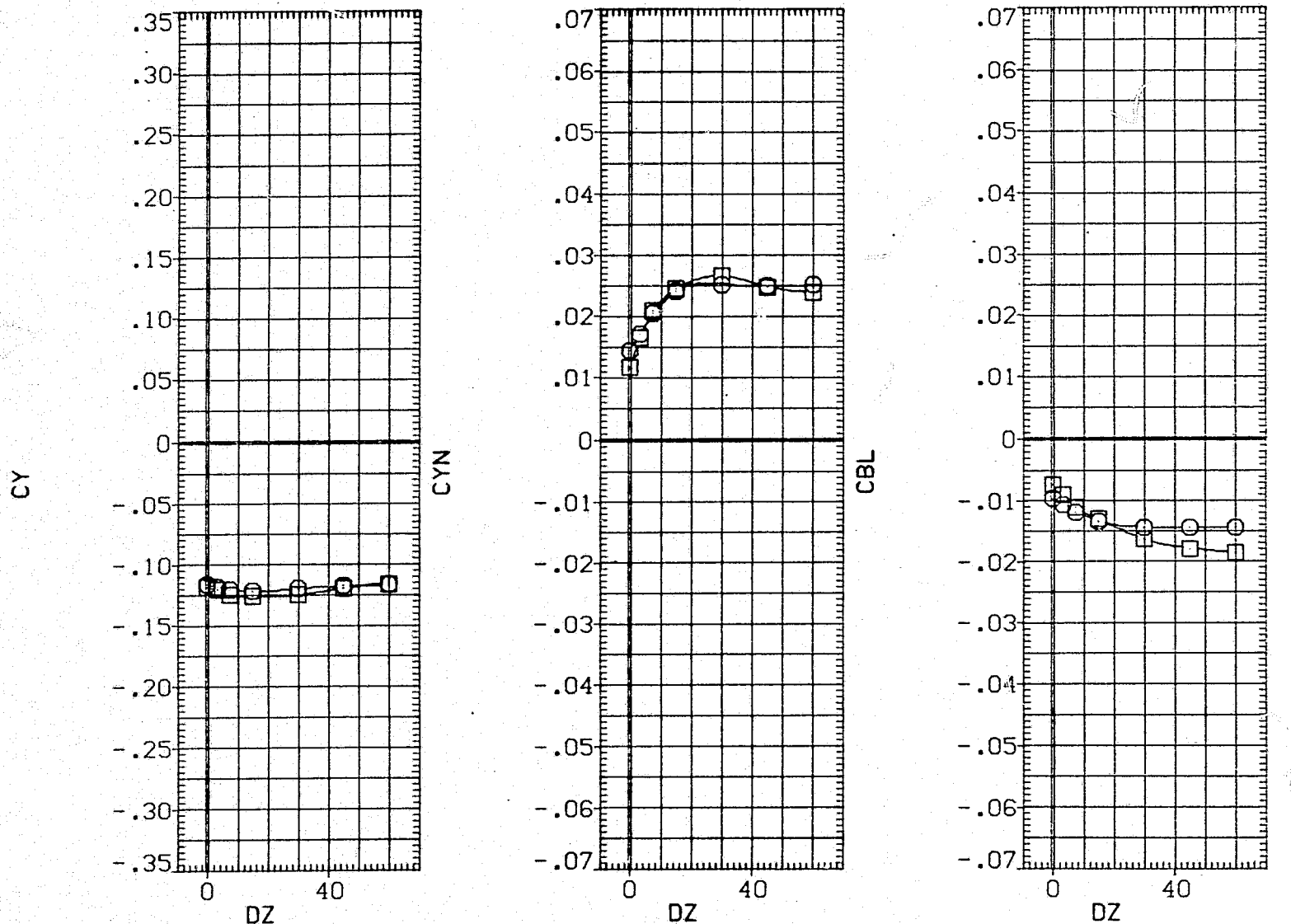


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

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CARRIER DATA (MGN075)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	.000		3.000
□	14.000	5.000		.600
		BETA0	.000	5.000
		PHI	.000	BETAC
		DX	10.000	DY
			ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

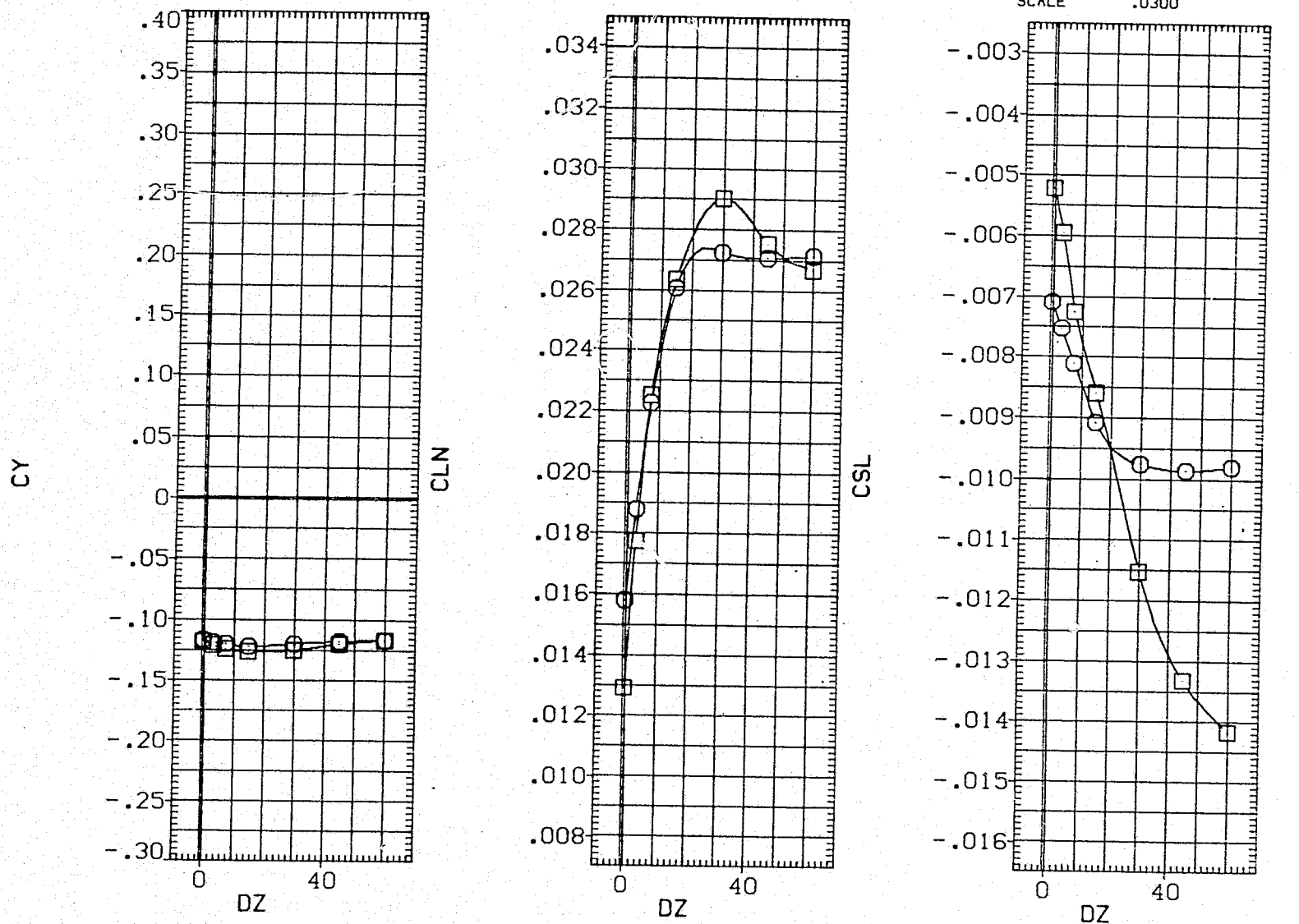


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	.000	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.XC
YMRF	.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

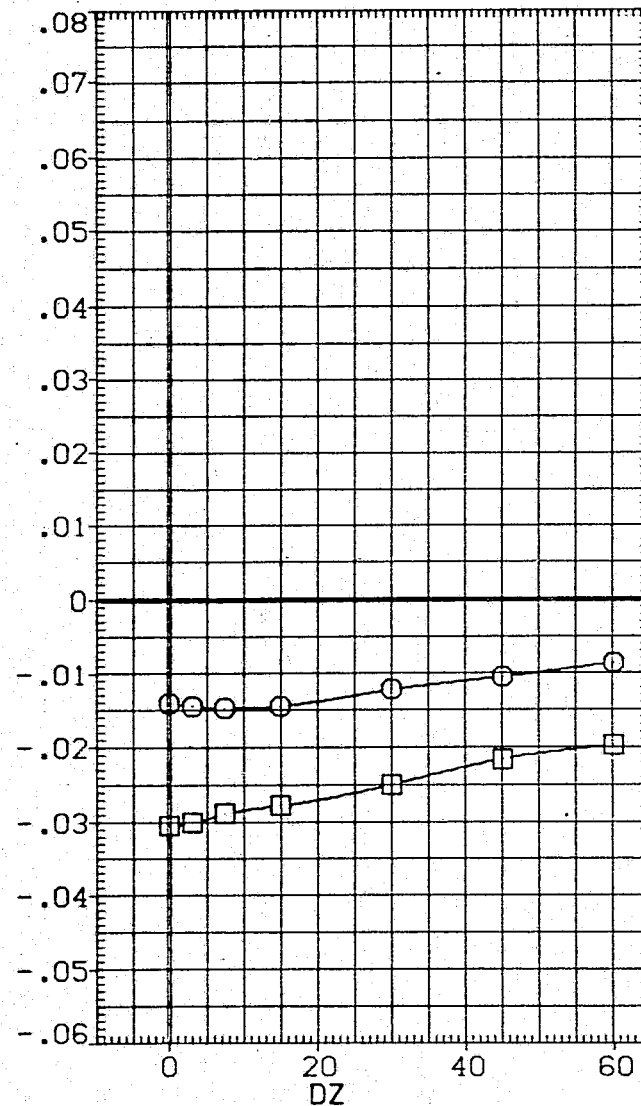
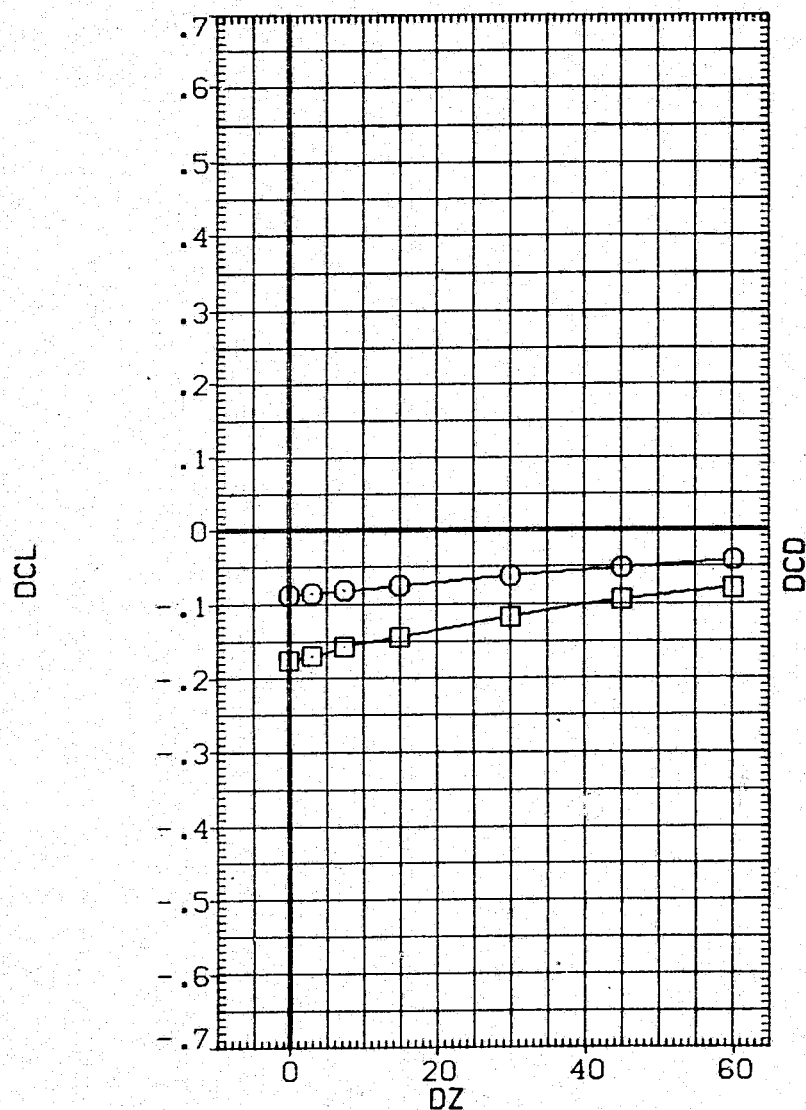


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL

○
□

ALPHA0

10.000

ALPHAC

PARAMETRIC VALUES

8.000

BETAC

5.000

ELV-IB

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

PHI

.000

DX

10.000

DY

10.000

BETA0

.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

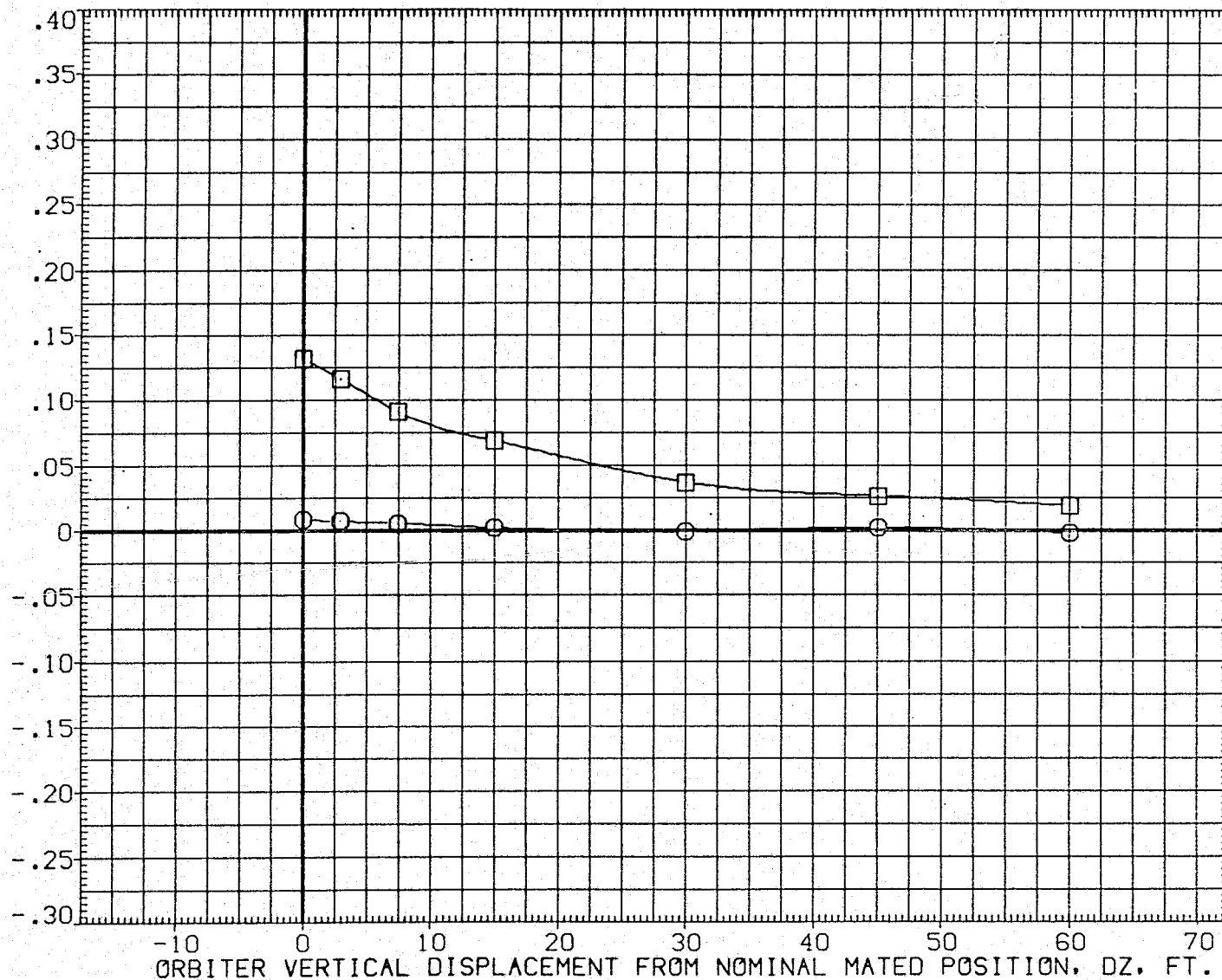


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC 5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

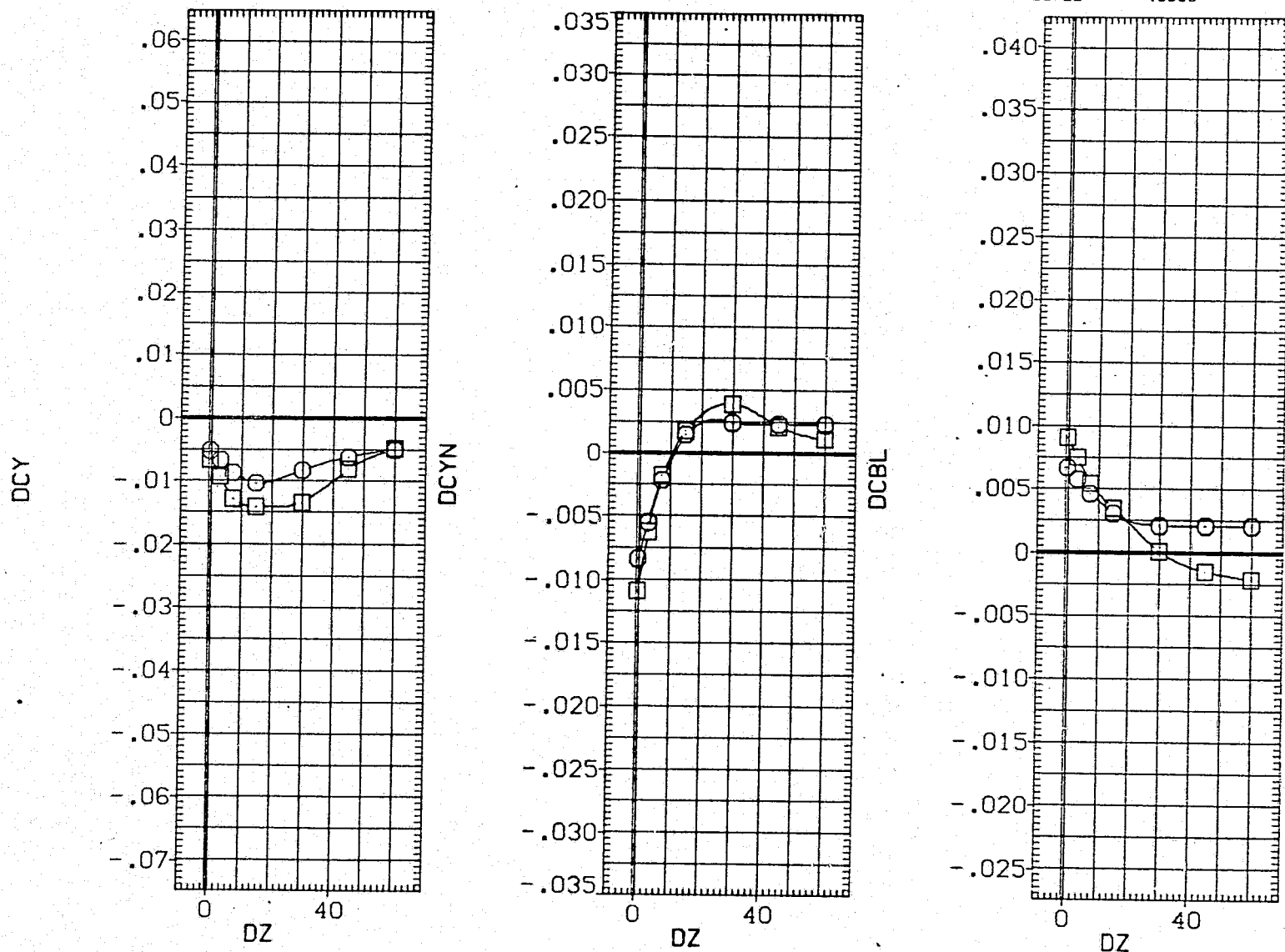


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC 5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI .000 DX 10.000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

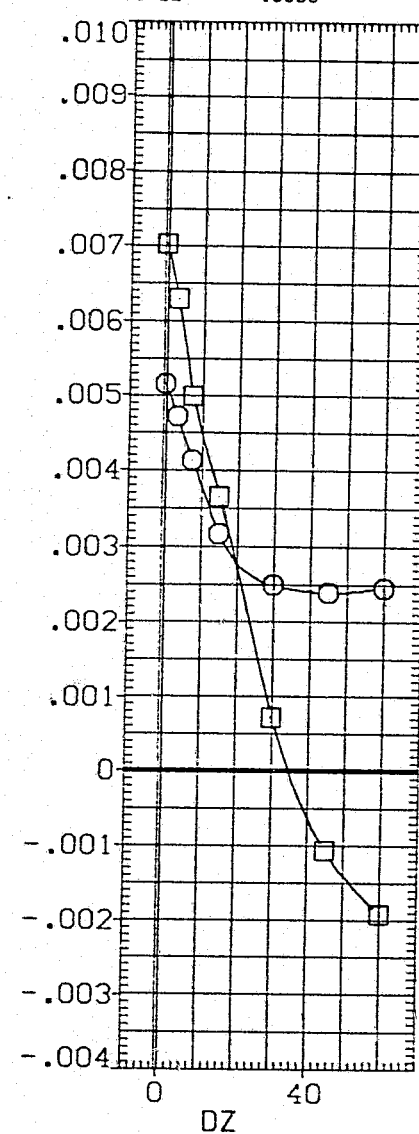
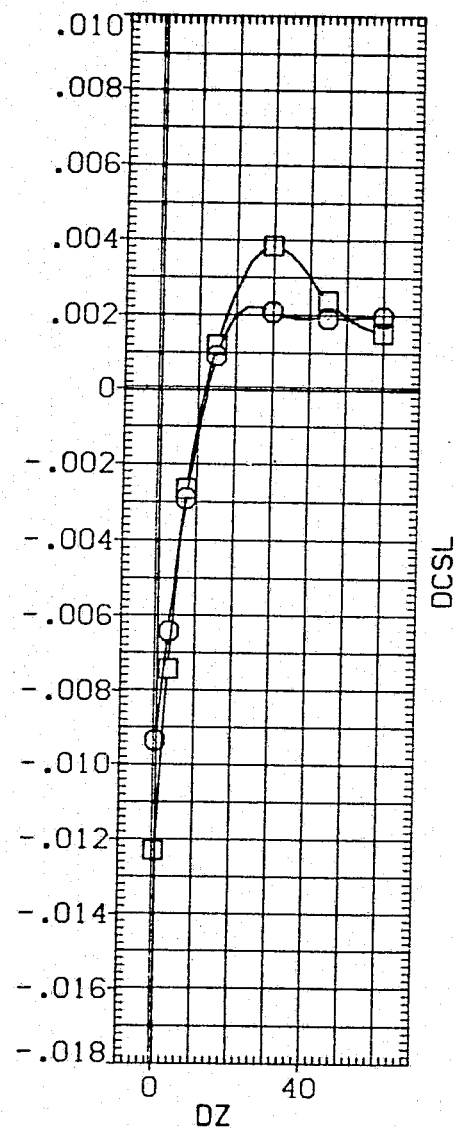
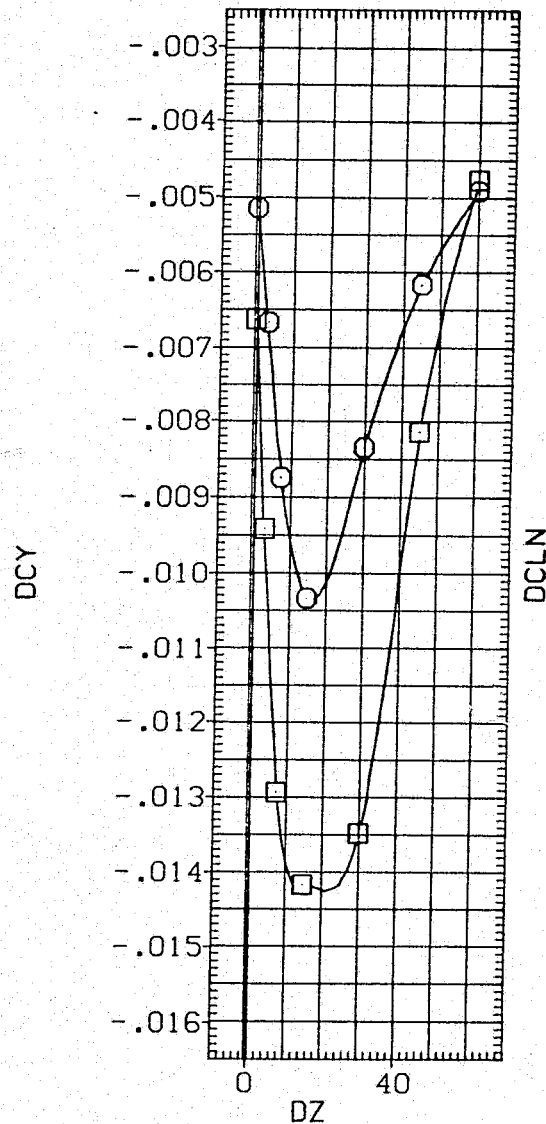


FIG 24 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 0)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	-5.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

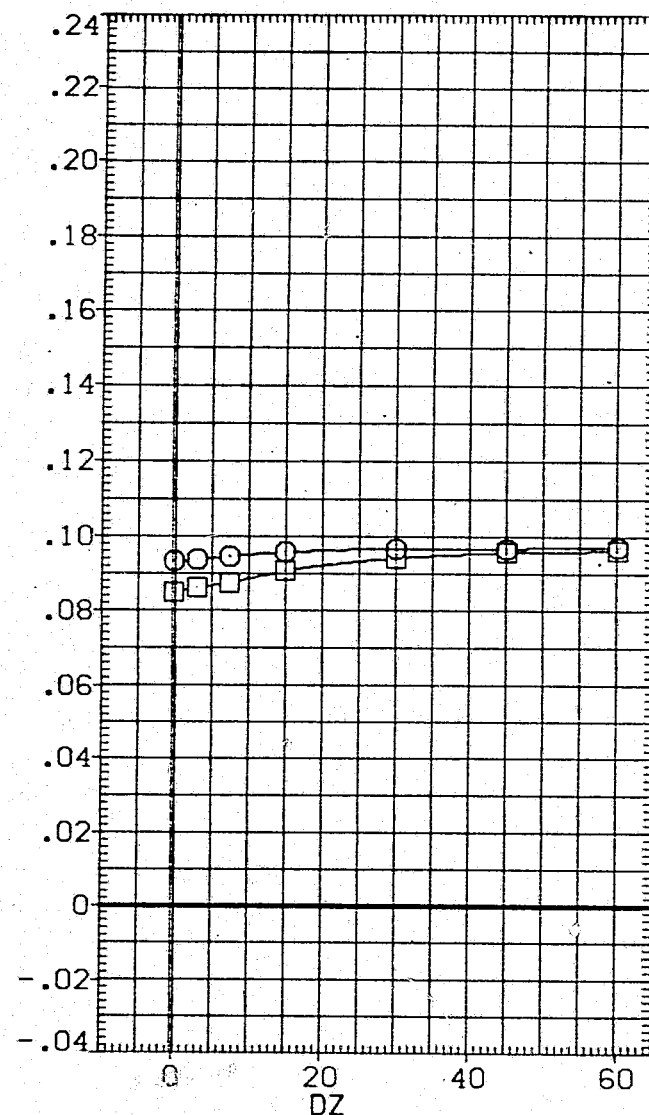
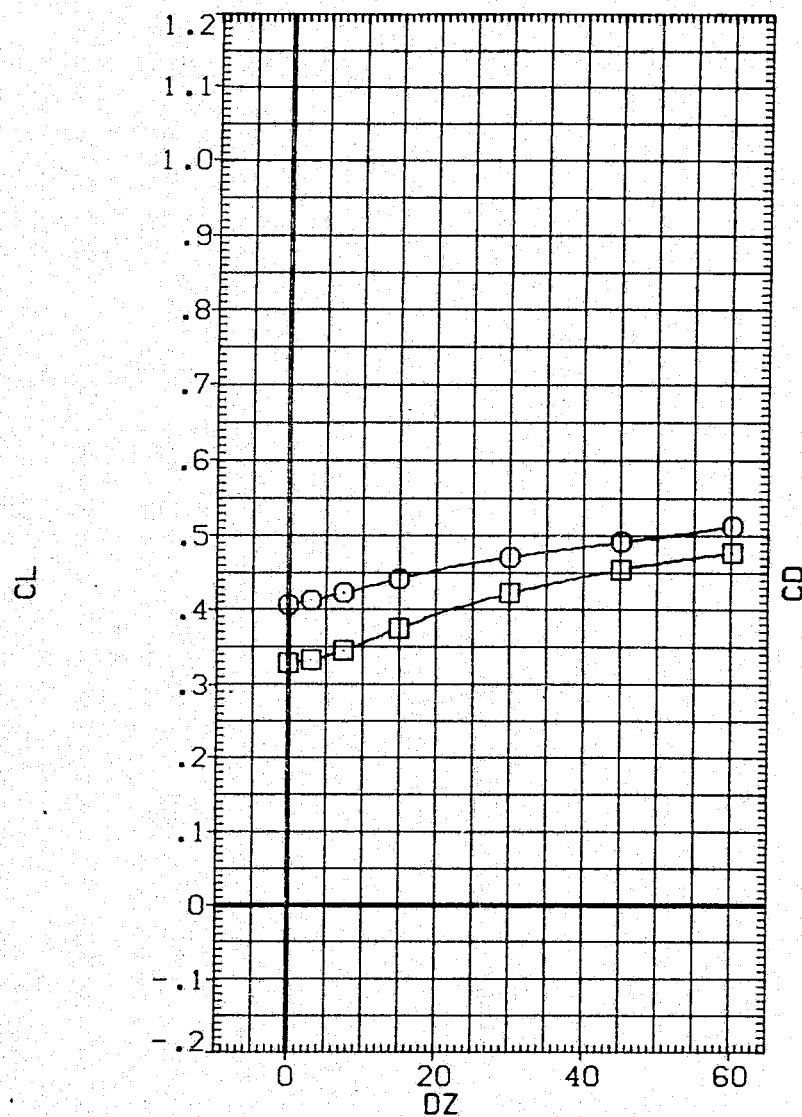


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	-5.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

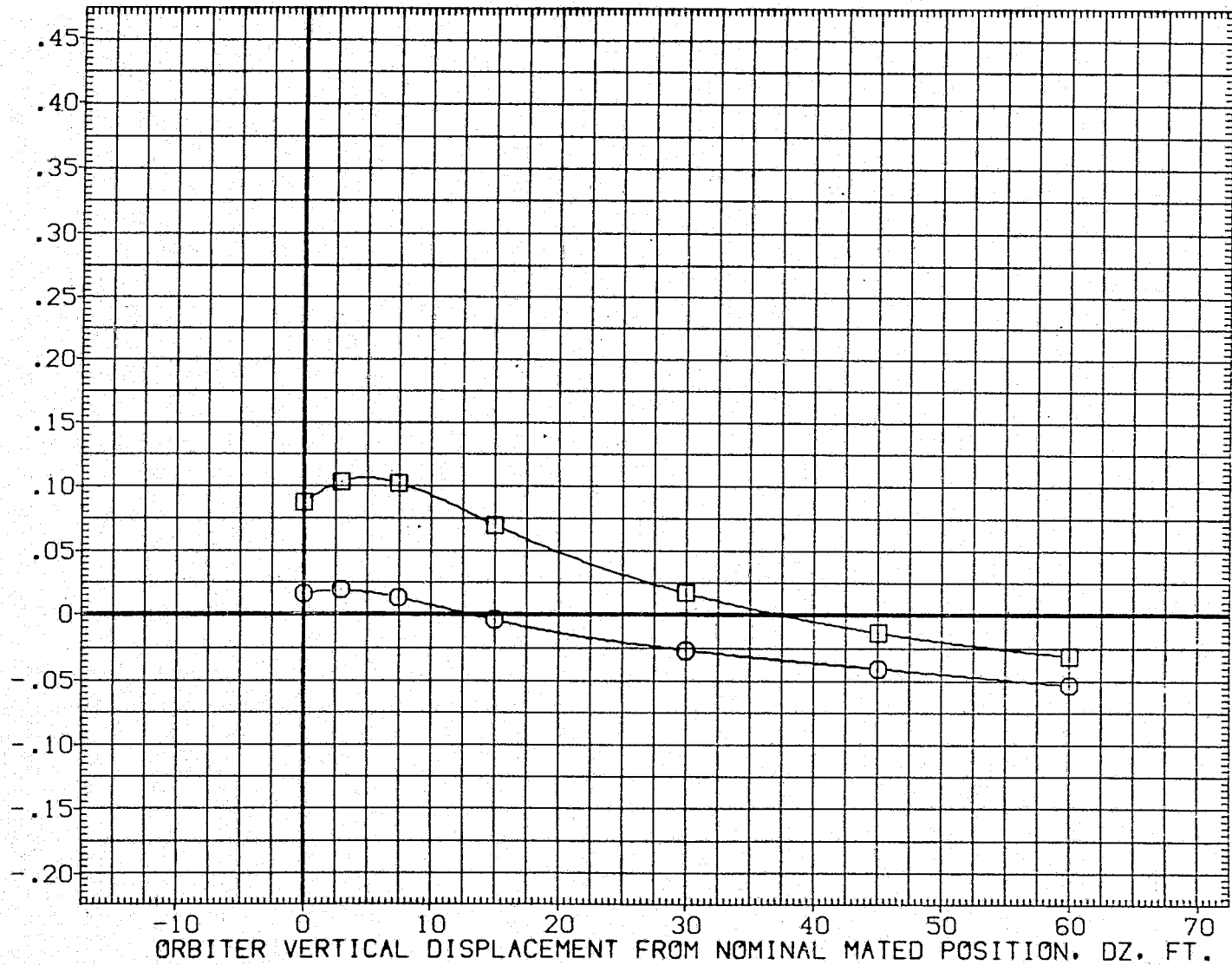


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

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CARRIER DATA (MGN096)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB
○	10.000	.000		3.000
□	14.000	5.000		.600
	BETA0	-5.000	BETAC	-5.000
	PHI	7.500	DY	10.000
	DX	.000	ALPHAC	4.000

REFERENCE INFORMATION	
SREF	5500.0000 SQ.FT.
LREF	327.7800 IN.
BREF	2348.0400 IN.
XMRP	1339.9000 IN.XC
YMRP	.0000 IN.YC
ZMRP	190.8000 IN.ZC
SCALE	.0300

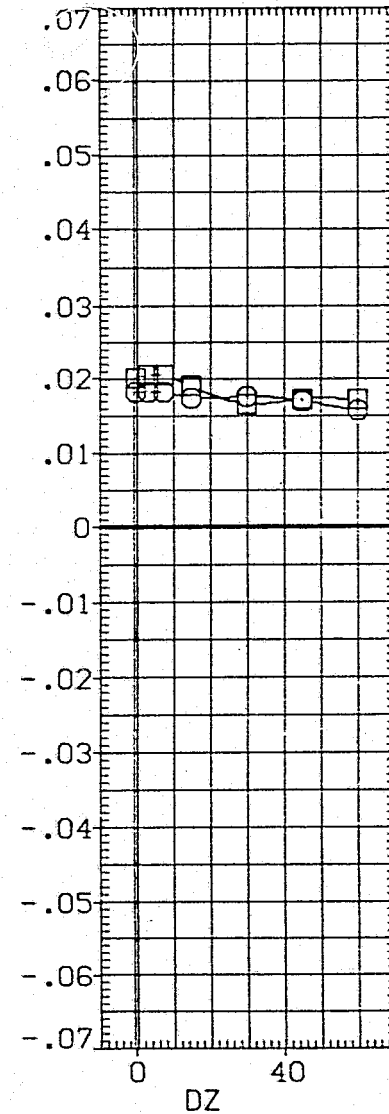
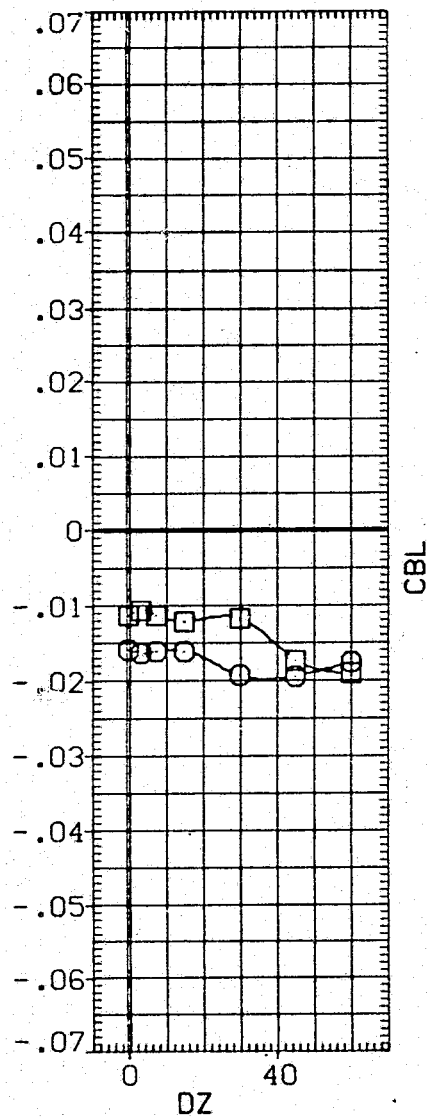
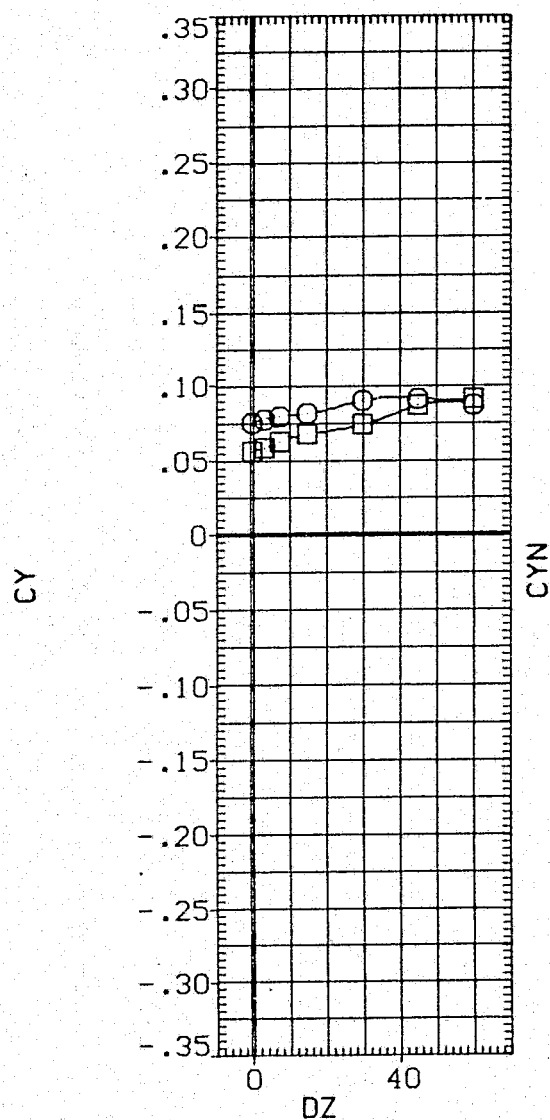


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ELV-18	.000	ELV-08	3.000
○	14.000	ELEVON	5.000	MACH	.600
□		BETA0	-5.000	BETAC	-5.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

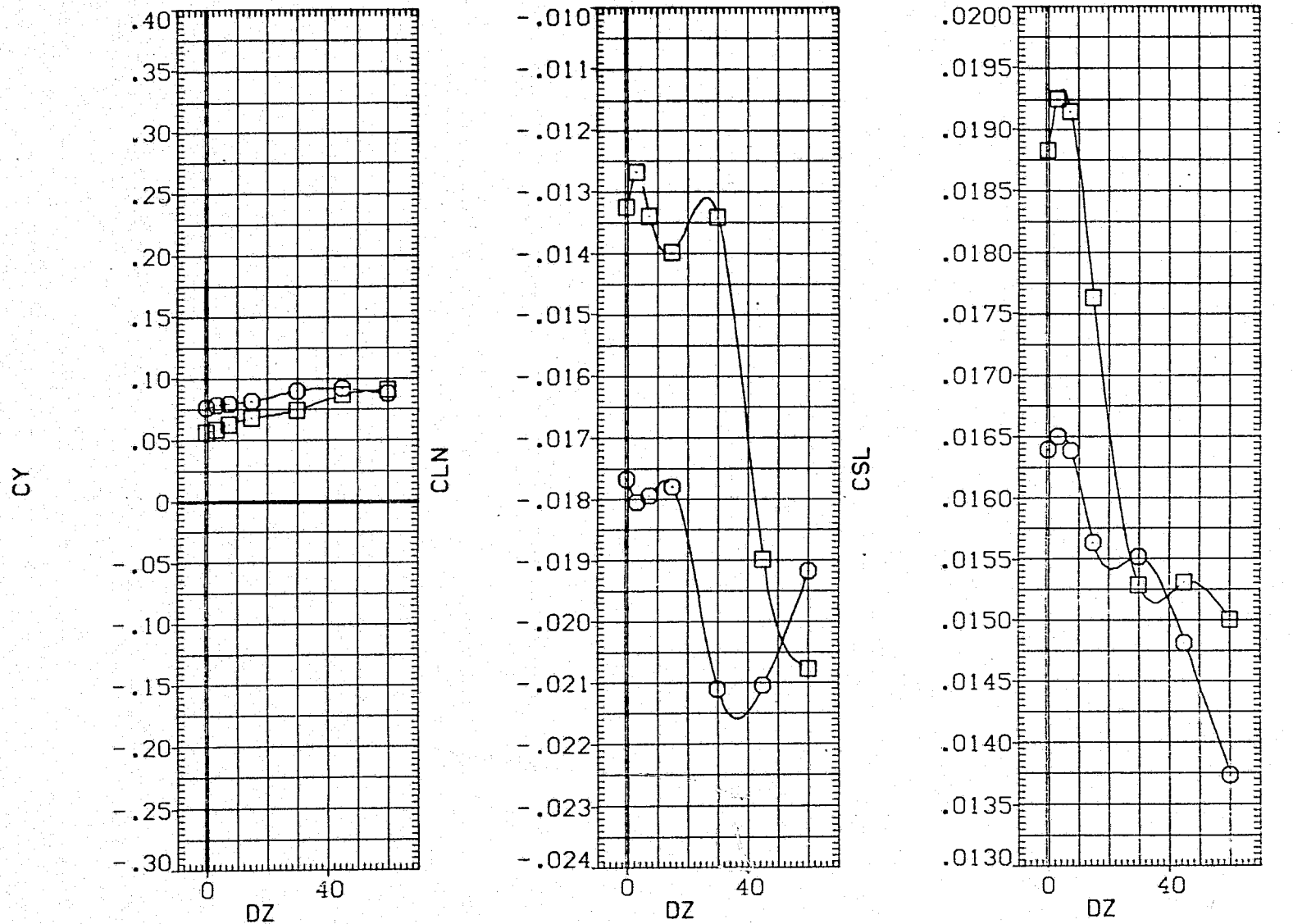


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC -5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX .000
		DY 10.000 BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	190.8000	IN.ZC
SCALE	.0300	

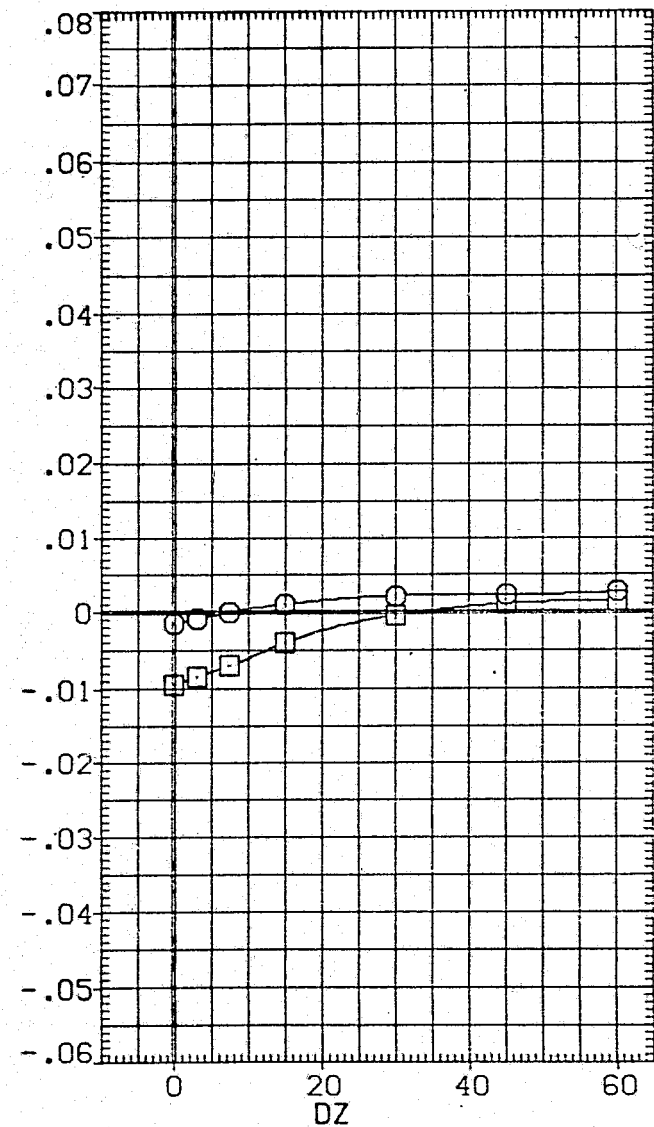
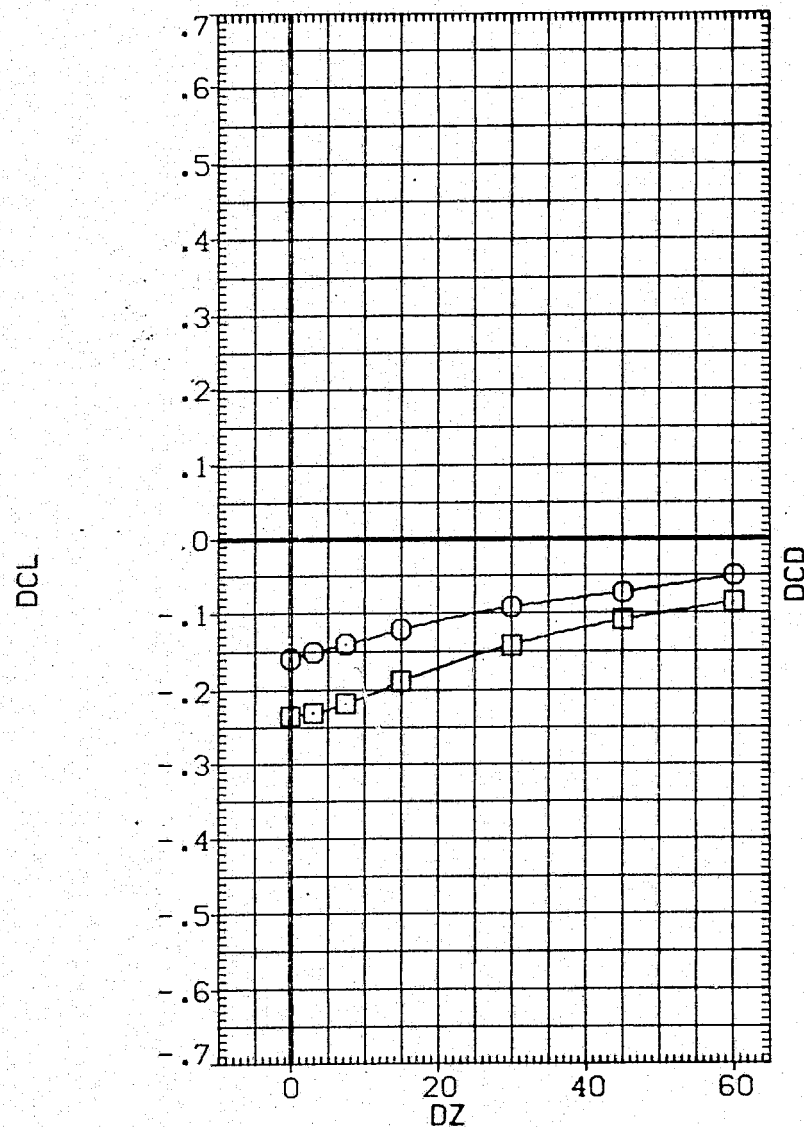


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-18

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

7.500

10.000

BETAC

ELV-08

MACH

DX

BETA0

-5.000

3.000

.600

.000

-5.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

50.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

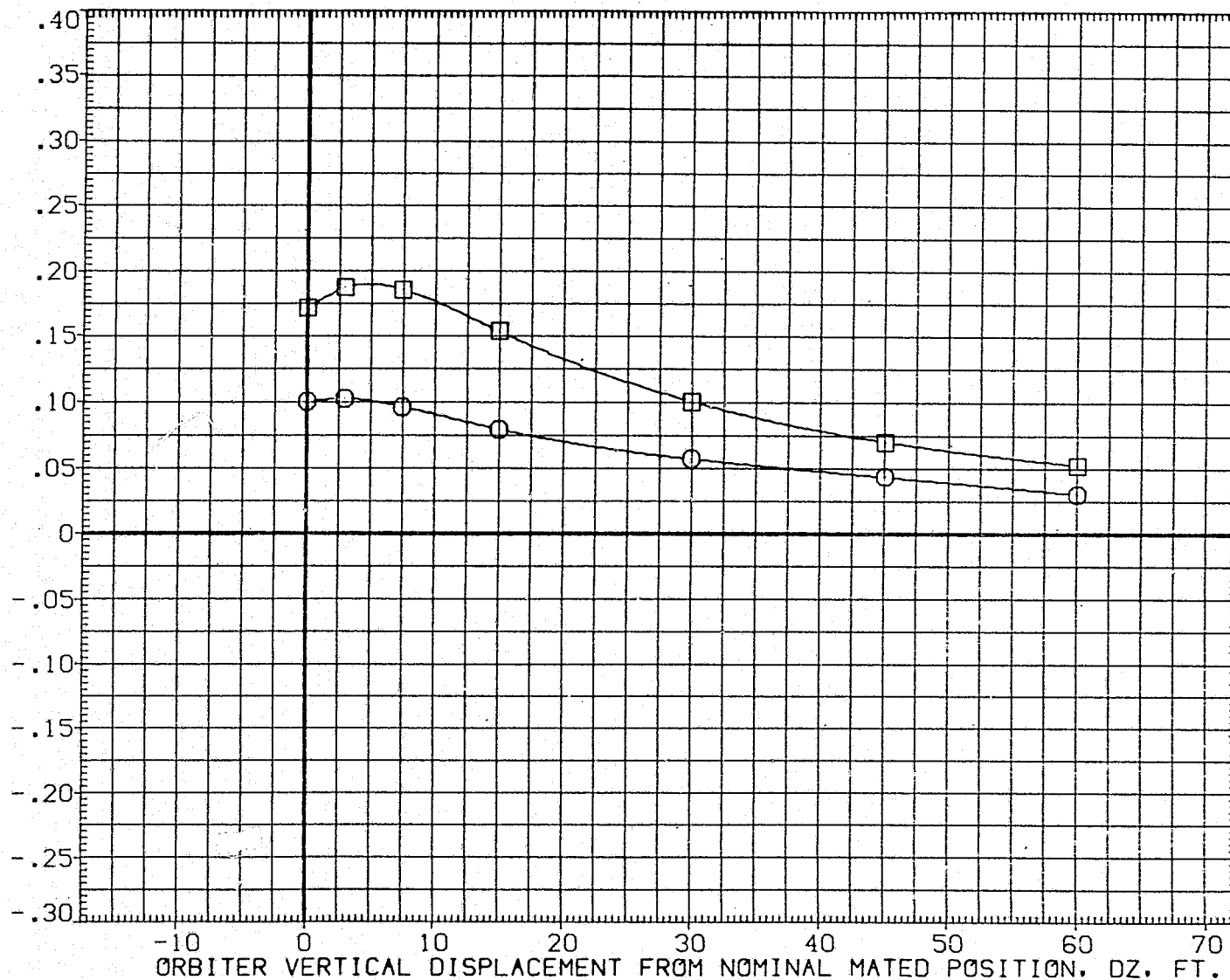


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	4.000	BETAC	-5.000
□	14.000	.000	ELV-0B	3.000
		5.000	MACH	.600
		7.500	DX	.000
		10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

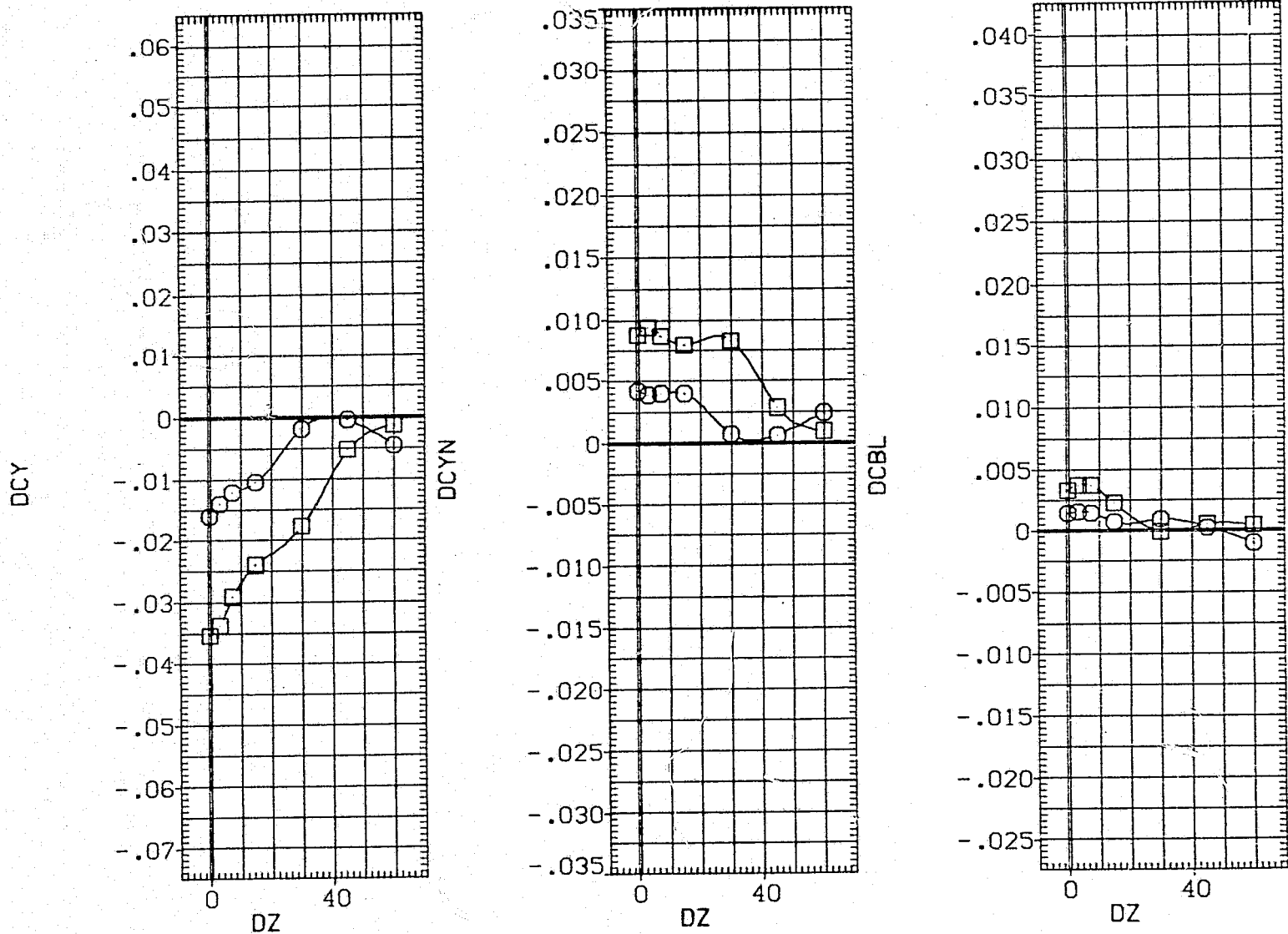


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	4.000	BETAC	-5.000
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

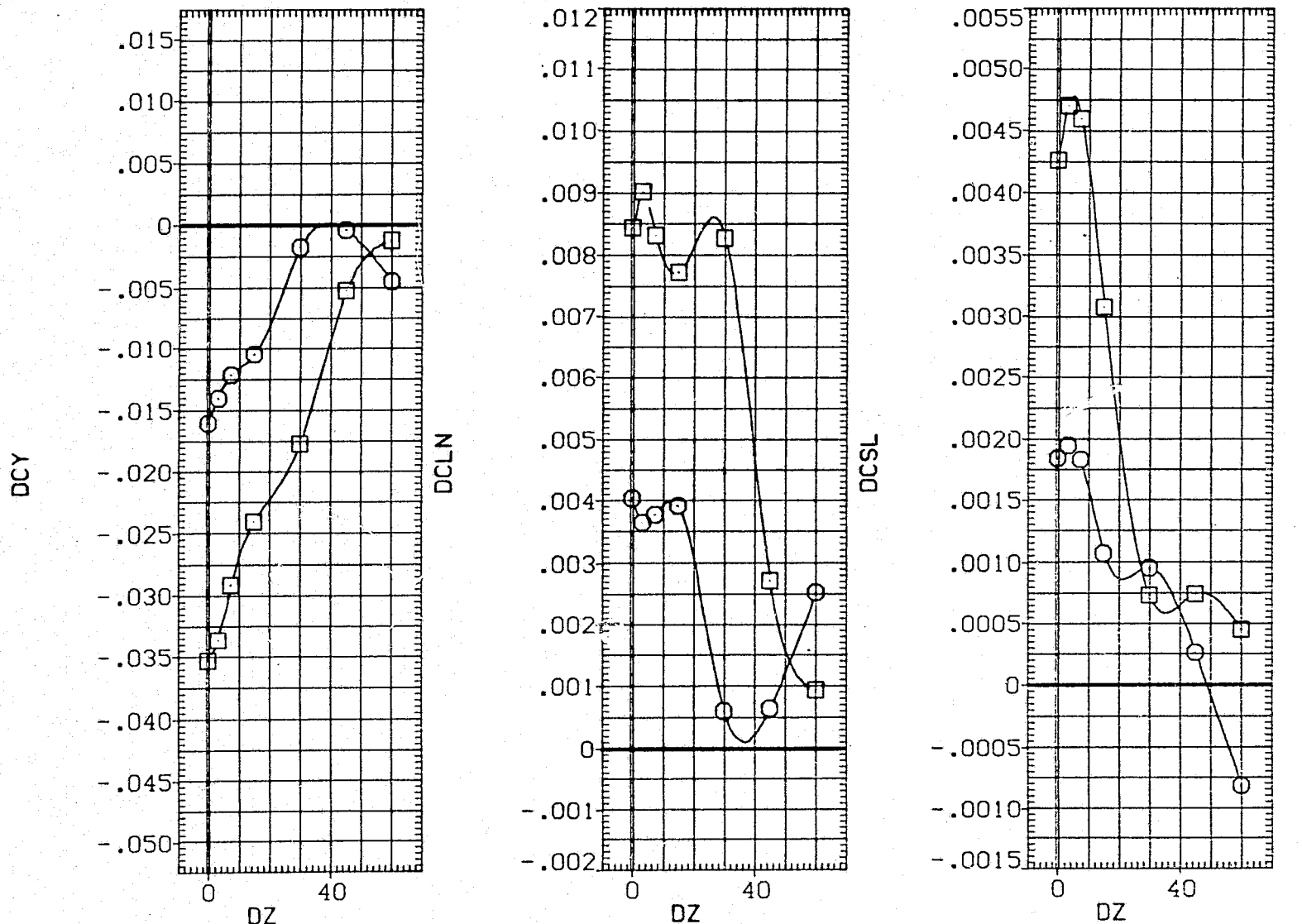


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-18 .000 ELV-08 3.000
□	14.000	ELEVON 5.000 MACH .600
		PHI 7.500 BETA0 -5.000
		BETAC -5.000 DY 10.000
		DX .000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.0000	IN.ZC
SCALE	.0300	

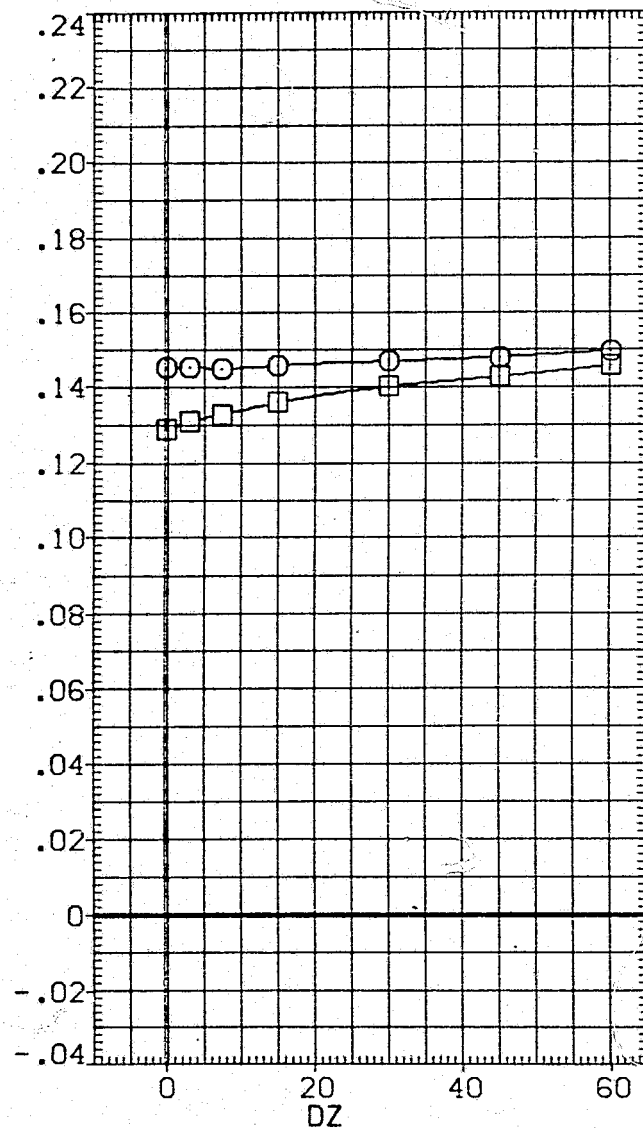
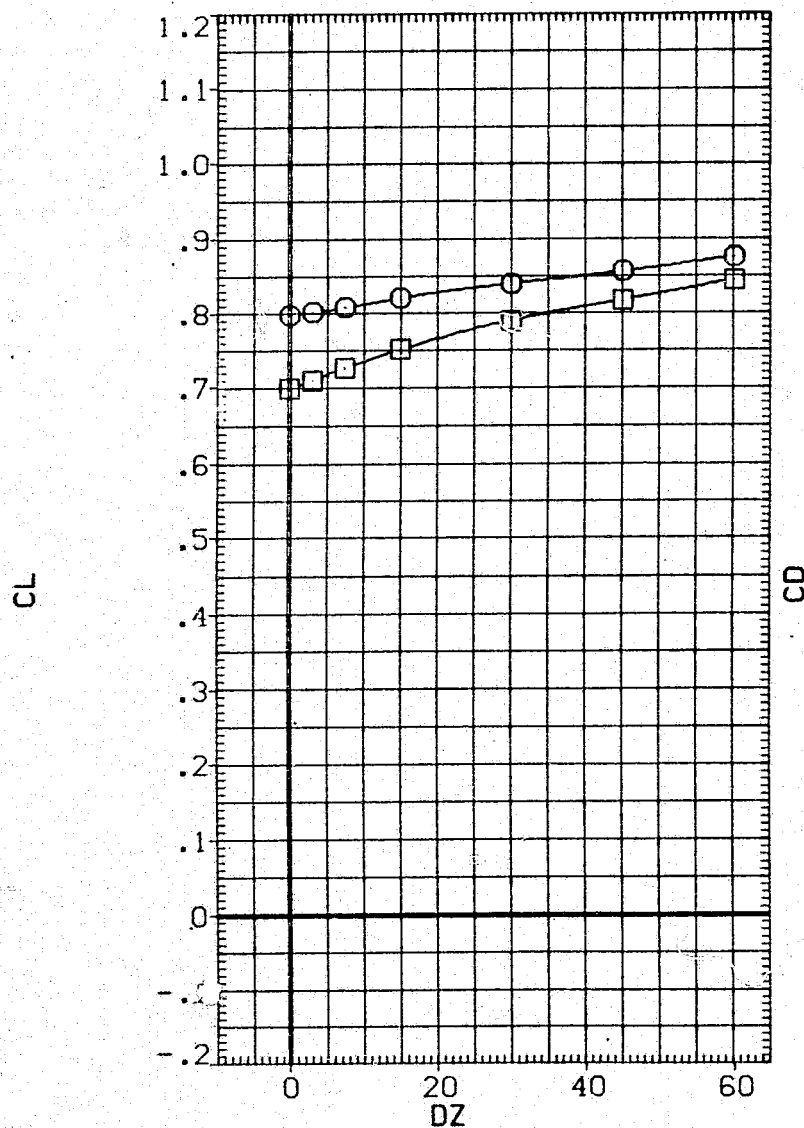


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○

□

ALPHA0

10.000

14.000

ELV-1B

ELEVON

PHI

BETAC

DX

PARAMETRIC VALUES

ELV-0B

MACH

BETA0

DY

ALPHAC

3.000

.600

-5.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.0000 50.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

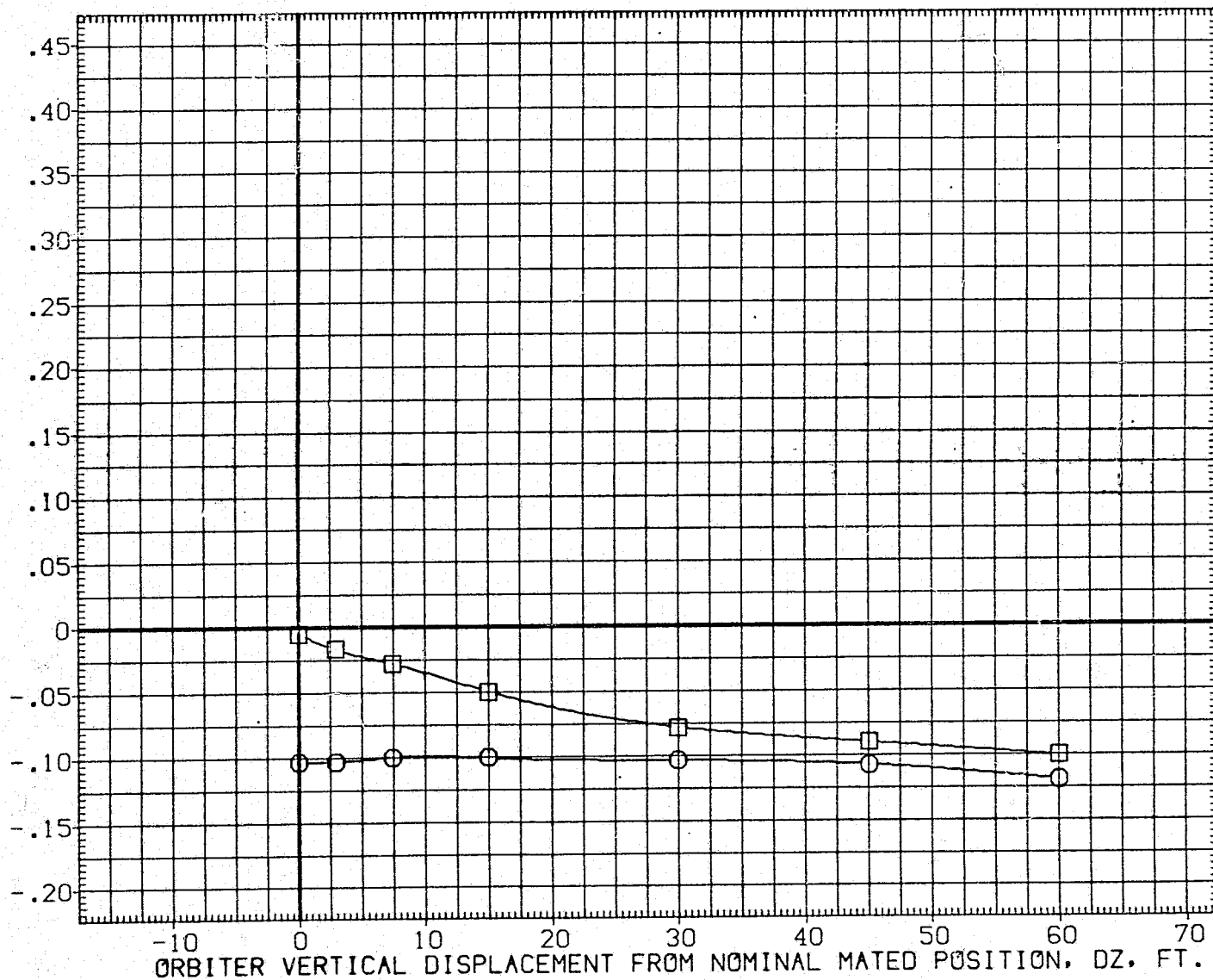


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-IB .000 ELV-OB 3.000
□	14.000	ELEVON 5.000 MACH .600
		PHI 7.500 BETA0 -5.000
		BETAC -5.000 DY 10.000
		DX .000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1332.3000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

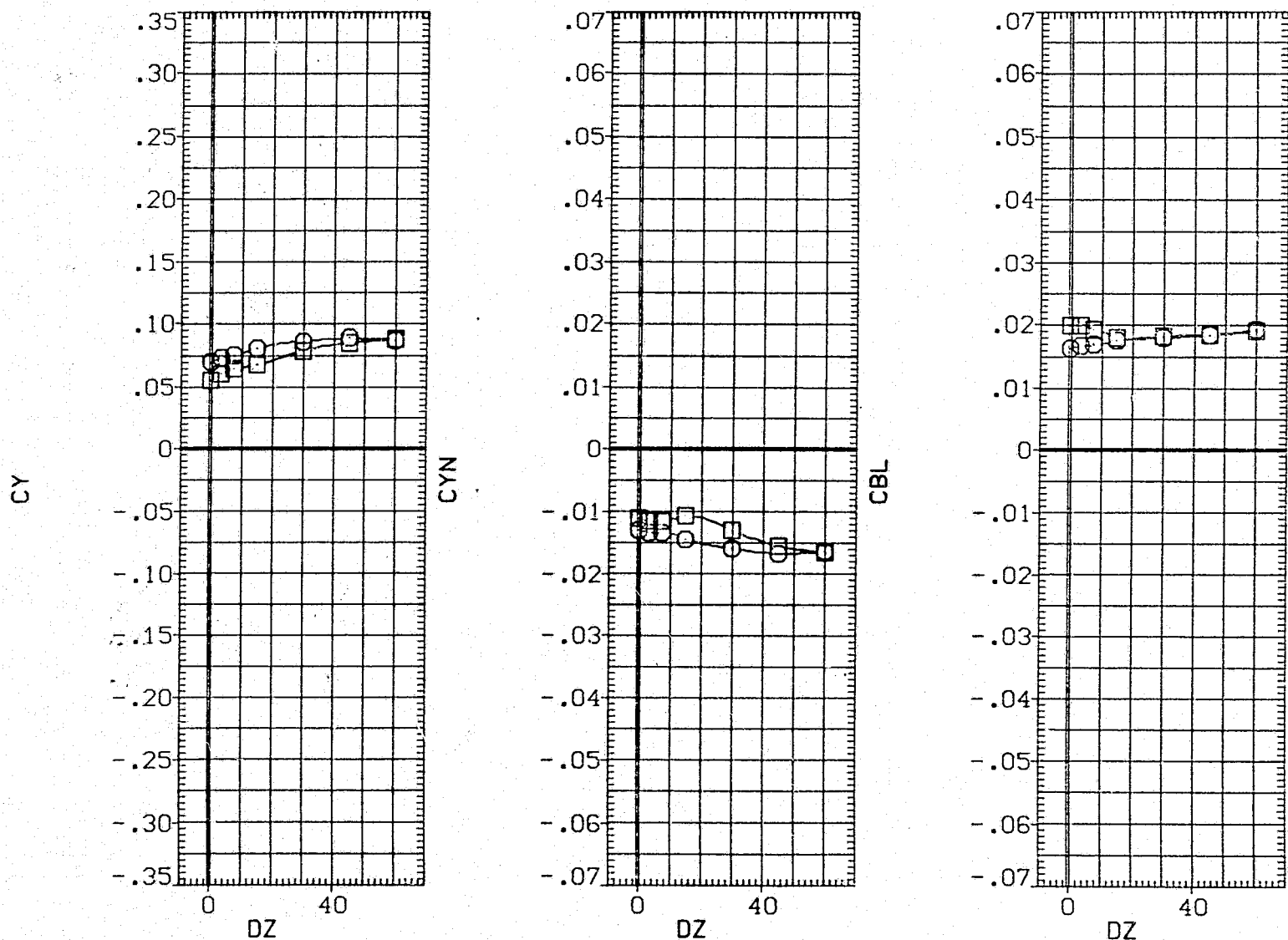


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGN097)

SYMBOL

○
□

ALPHA0

10.000

ELV-1B

ELEV0N

PHI

BETAC

DX

PARAMETRIC VALUES

.000

5.000

7.500

-5.000

.000

ELV-0B

MACH

BETA0

DY

ALPHAC

3.000

.600

-5.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

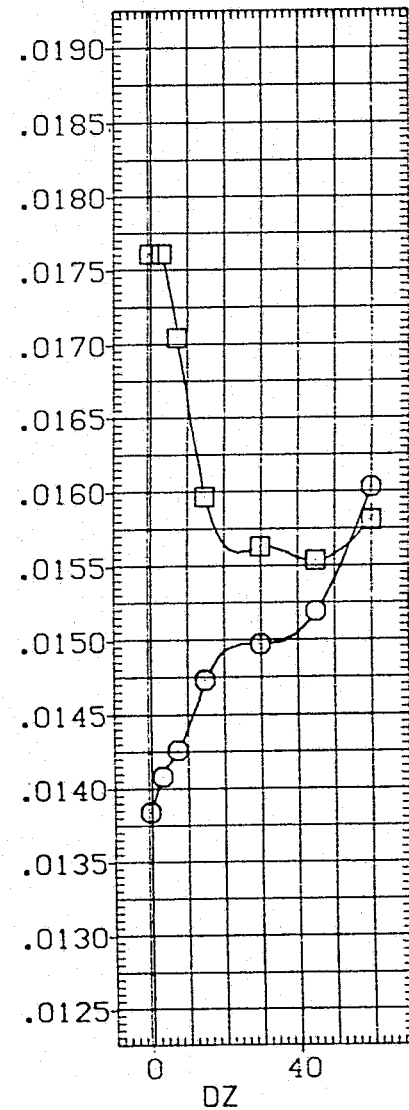
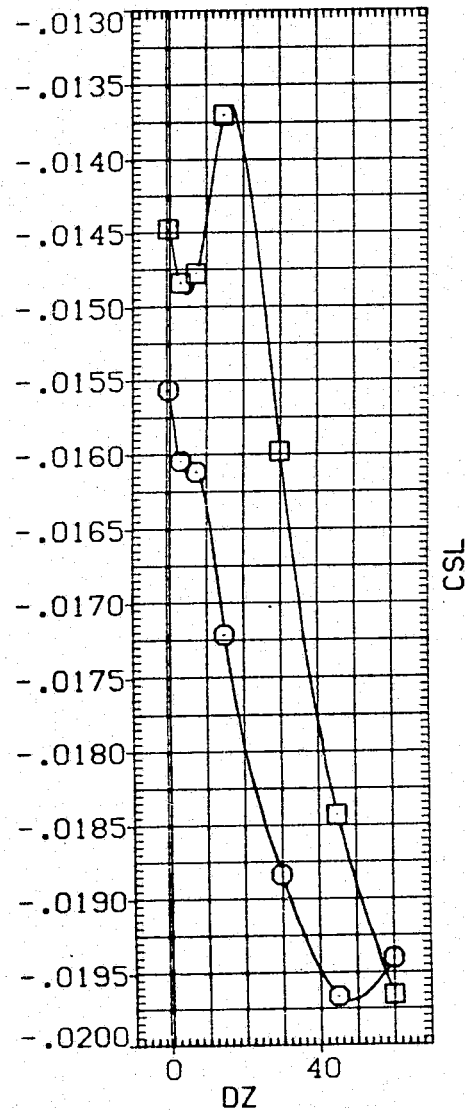
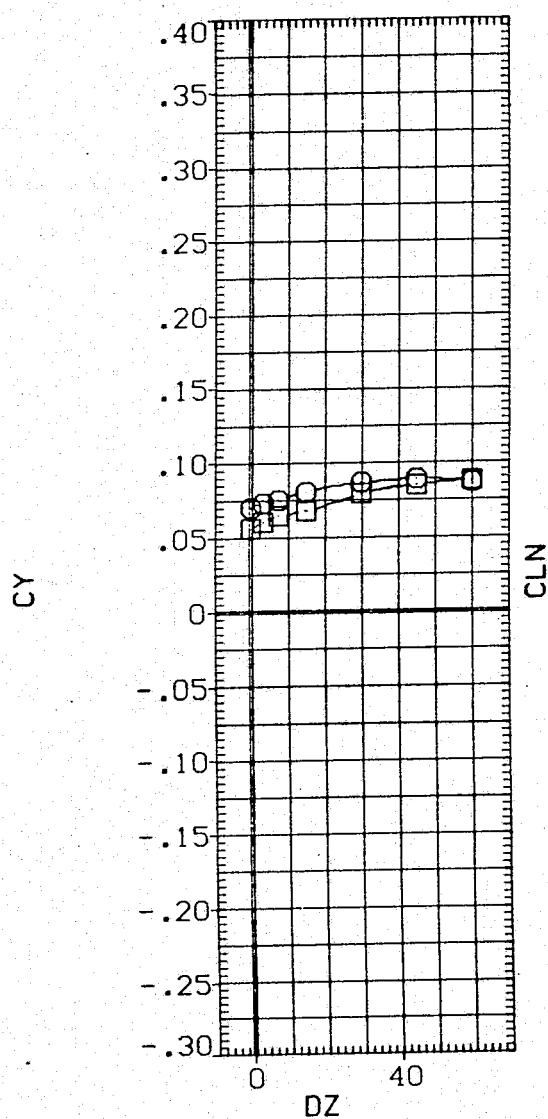


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000 BETAC -5.000

.000 ELV-0B 3.000

5.000 MACH .600

7.500 DX .000

10.000 BETA0 -5.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.YC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

DCL

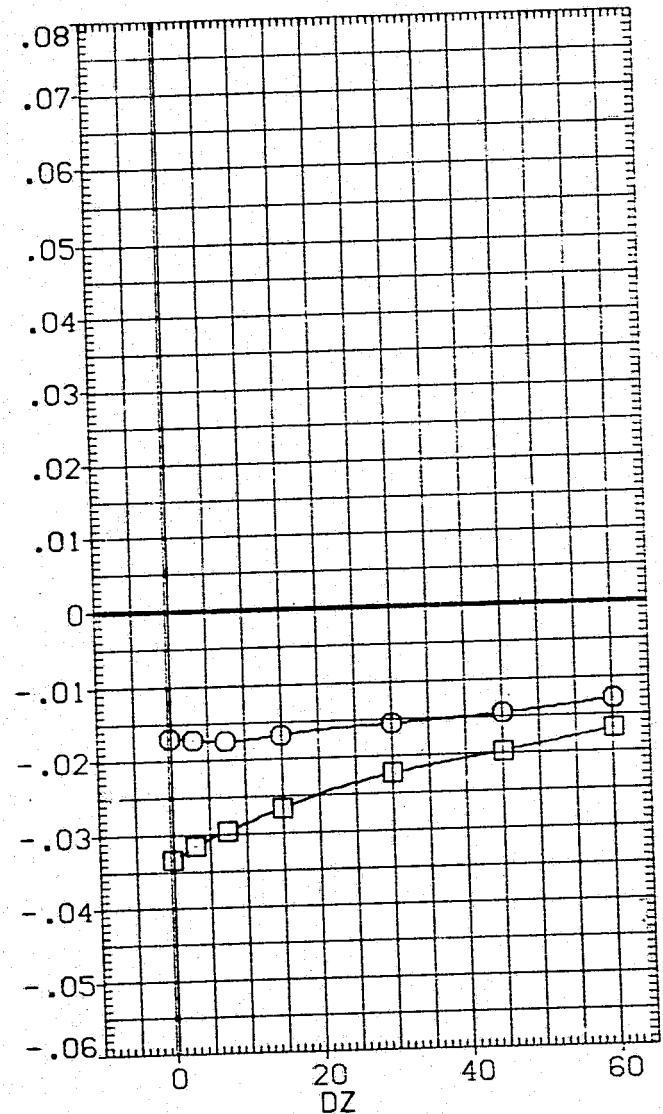
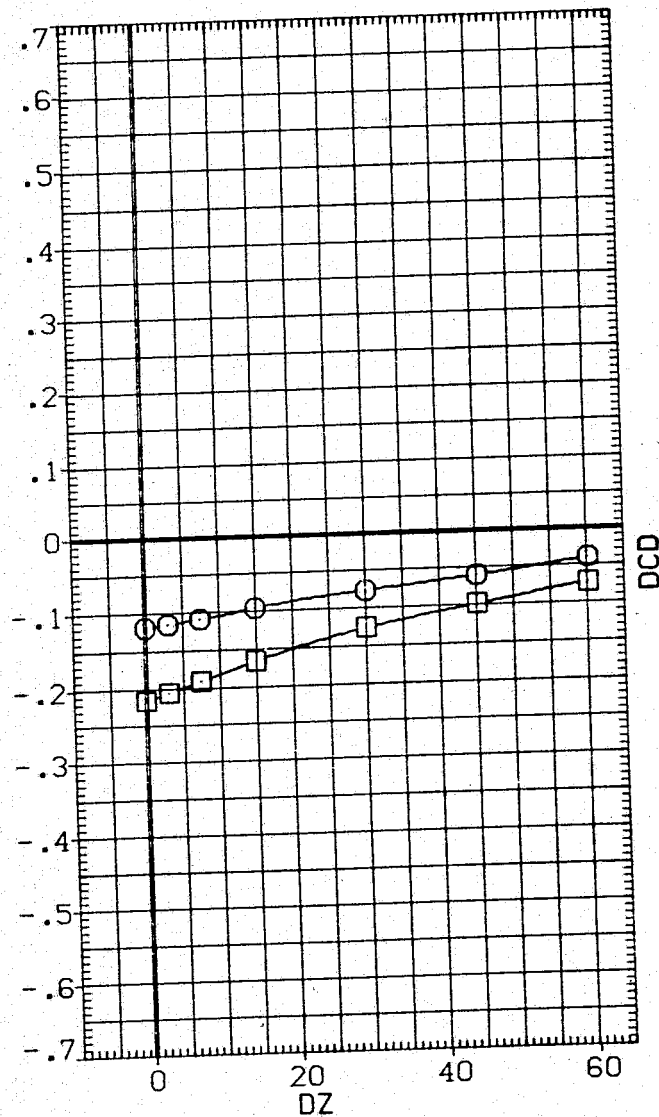


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

7.500

10.000

BETAC

ELV-OB

MACH

DX

BETA0

-5.000

3.000

.600

.000

-5.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

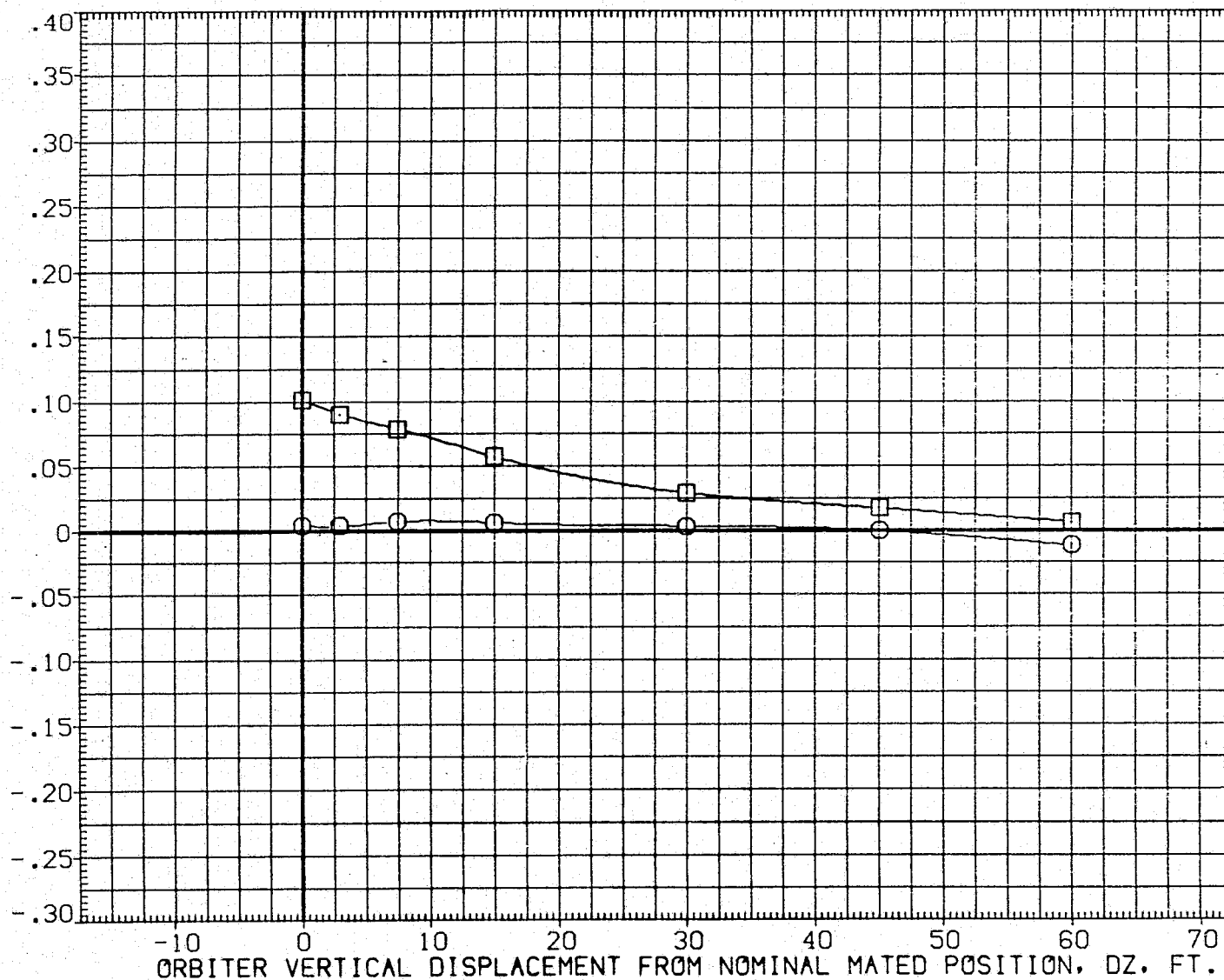


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	ELV-IB	8.000	-5.000
□	14.000	ELEVON	.000	3.000
		PHI	5.000	.600
		DY	7.500	.000
			10.000	BETA0
				-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

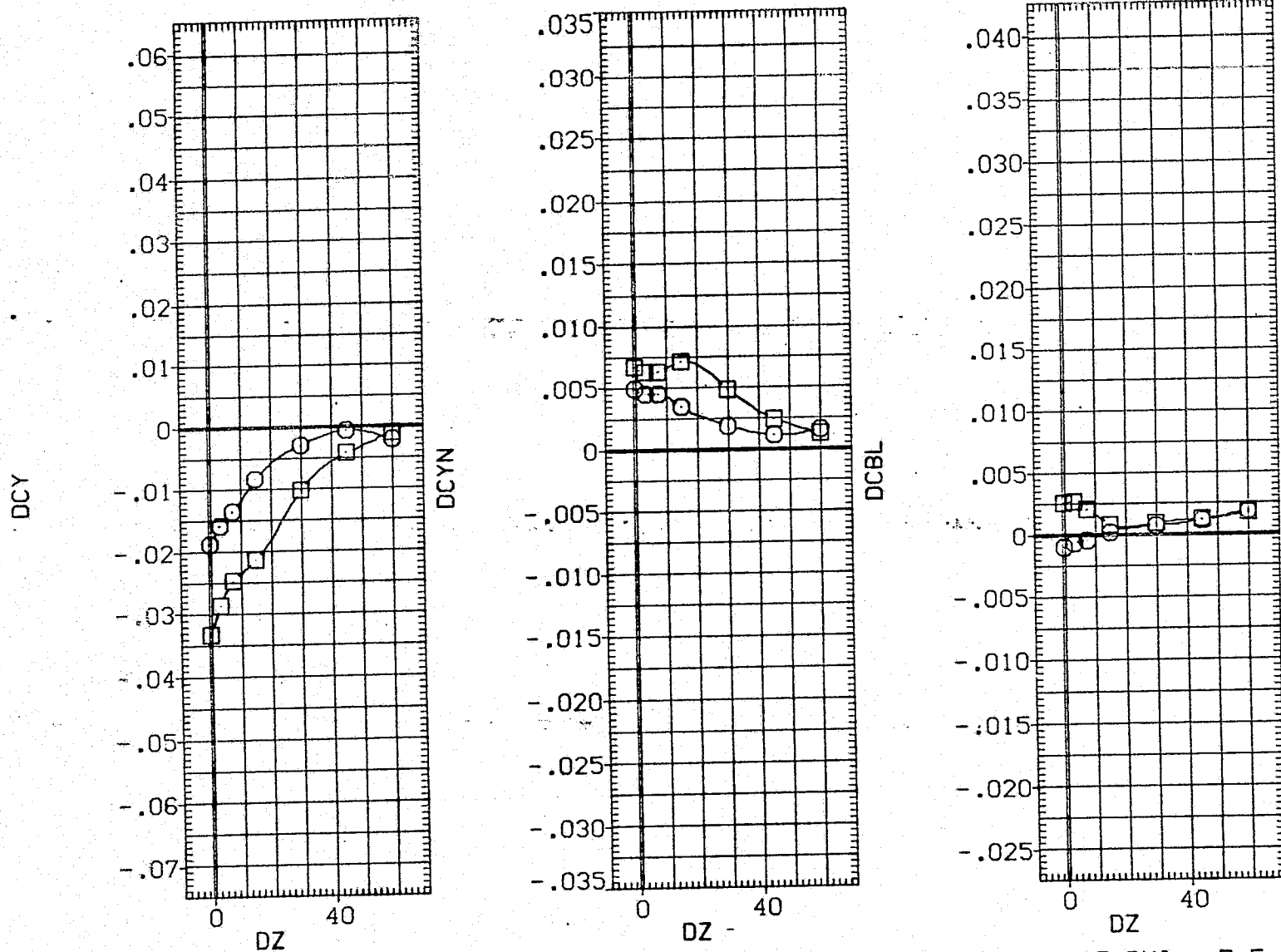


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	8.000	BETAC	-5.000
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

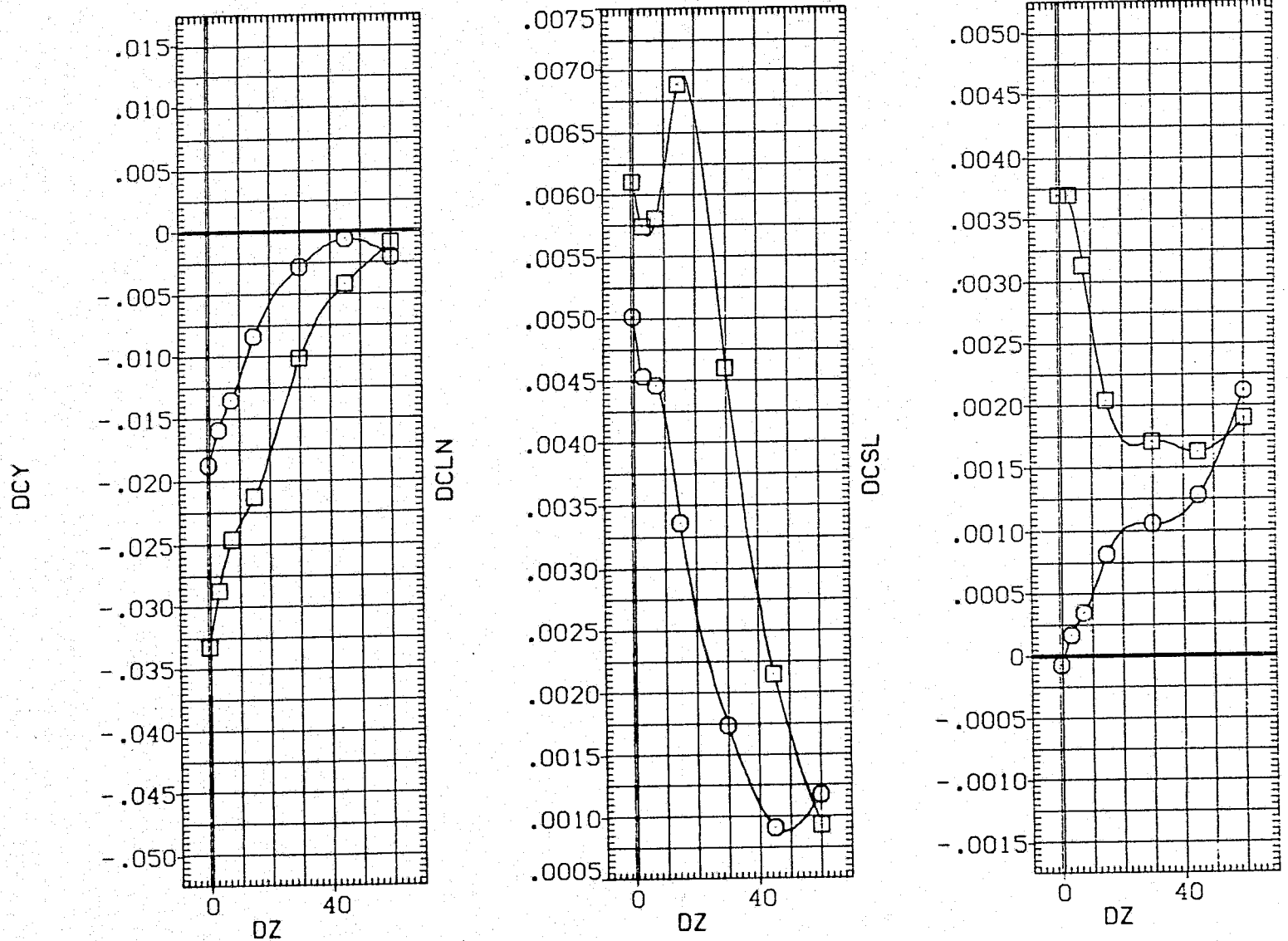


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		PHI 7.500 BETA0 -5.000
		BETAC .000 DY 10.000
		DX .000 ALPHAC 4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.2400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

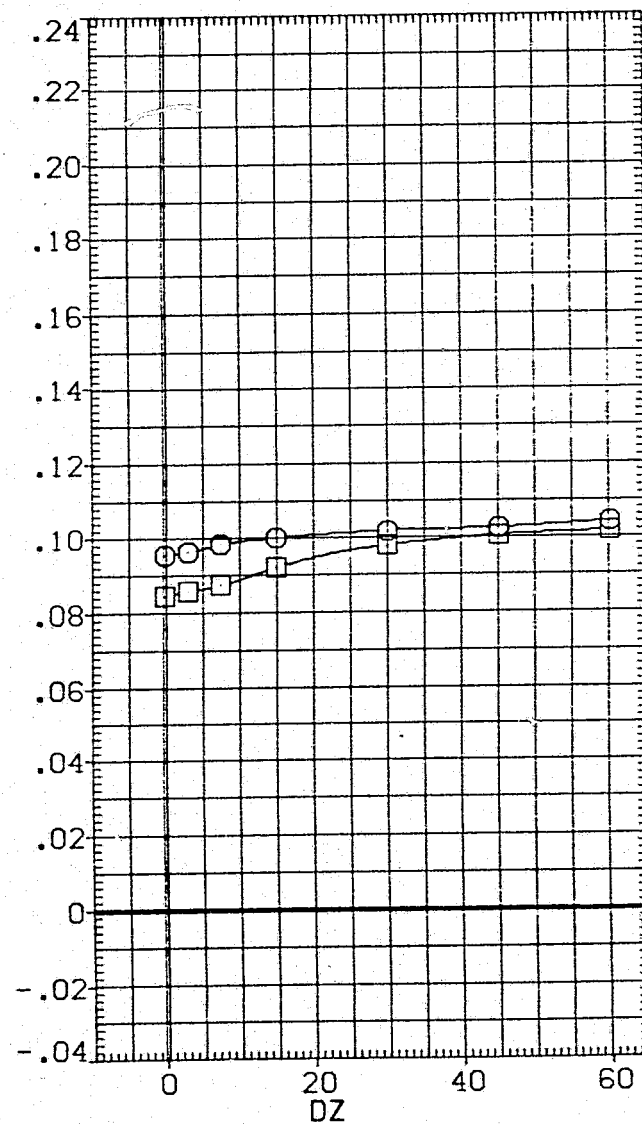
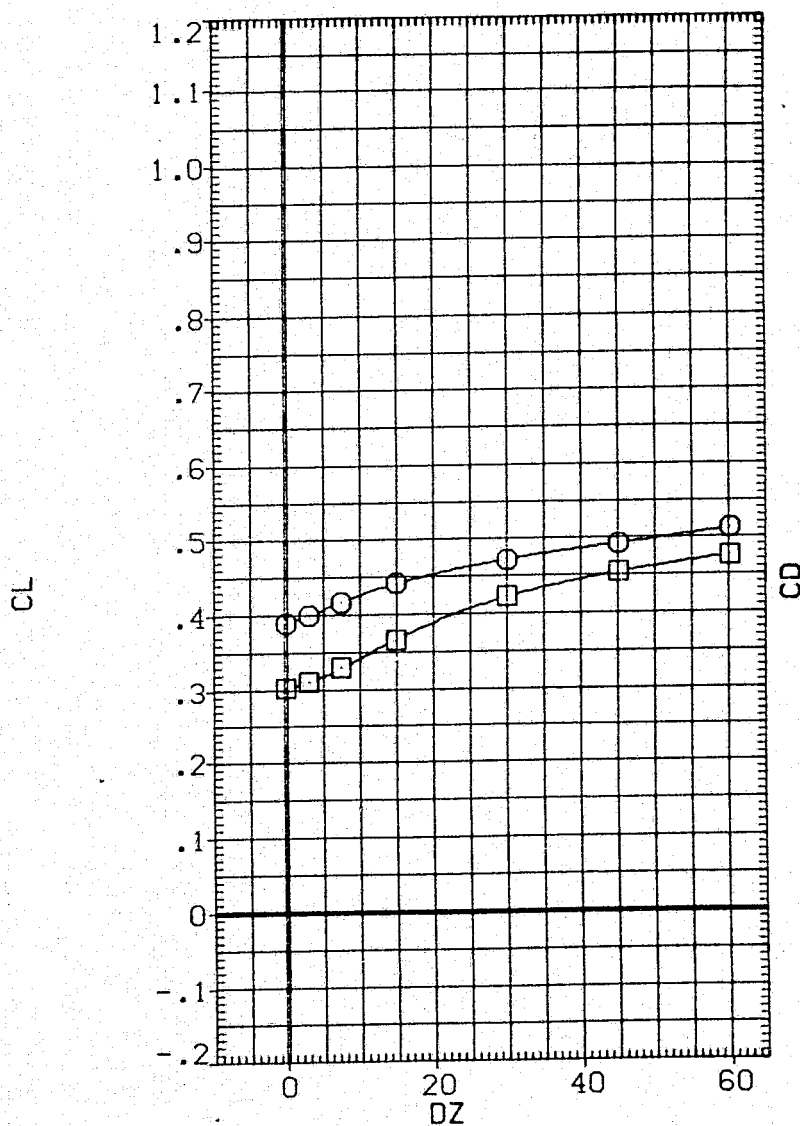


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ELV-1B

ELEVON

PHI

BETAC

DX

PARAMETRIC VALUES

ELV-0B

MACH

BETA0

DY

ALPHAC

3.000

.600

-5.000

10.000

4.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

PITCHING MOMENT COEFFICIENT, CLM

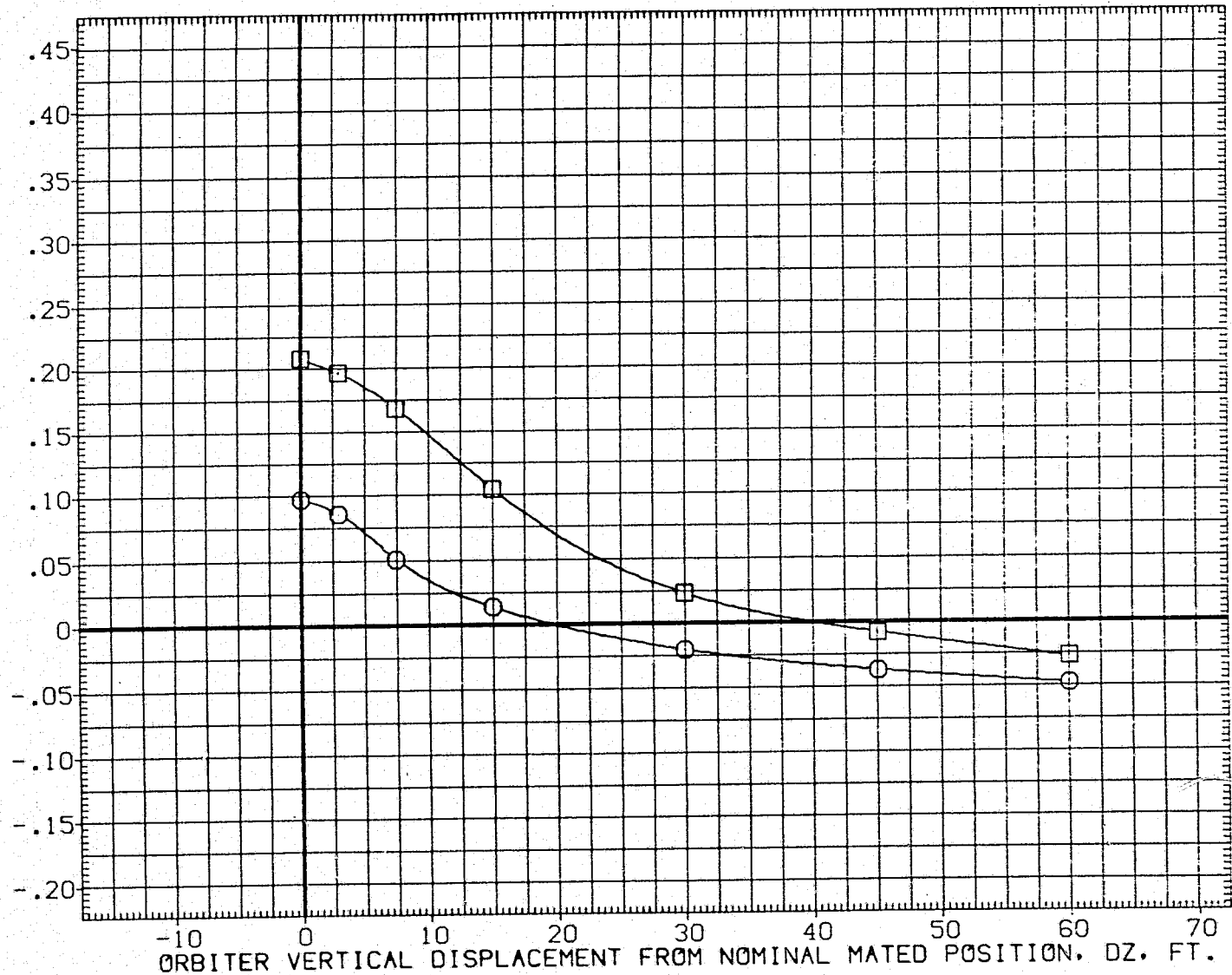


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGNCS3)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-IB .000 ELV-OB 3.000
□	14.000	ELEVON 5.000 MACH .600
		PHI 7.500 BETA0 -5.000
		BETAC .000 DY 10.000
		DX .000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7600	IN.
BREF	2348.0400	IN.
YMRP	1339.9000	N.XC
YMRP	.0000	N.YC
ZMRP	190.8000	N.ZC
SCALE	.0300	

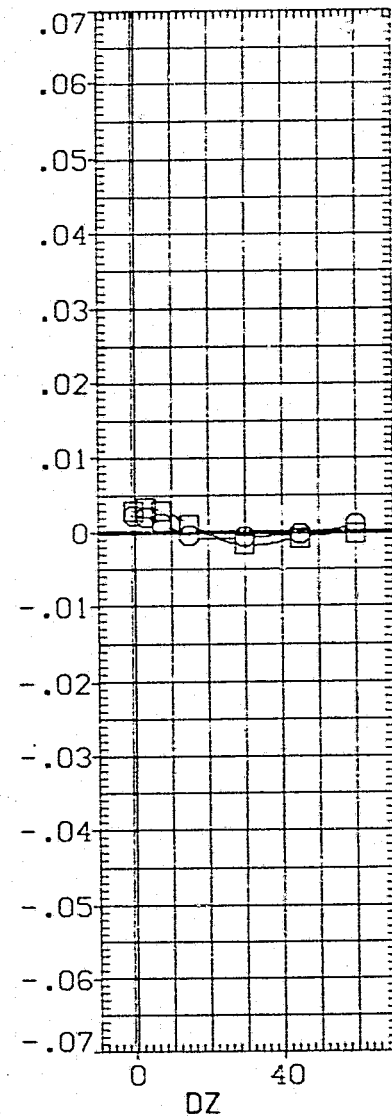
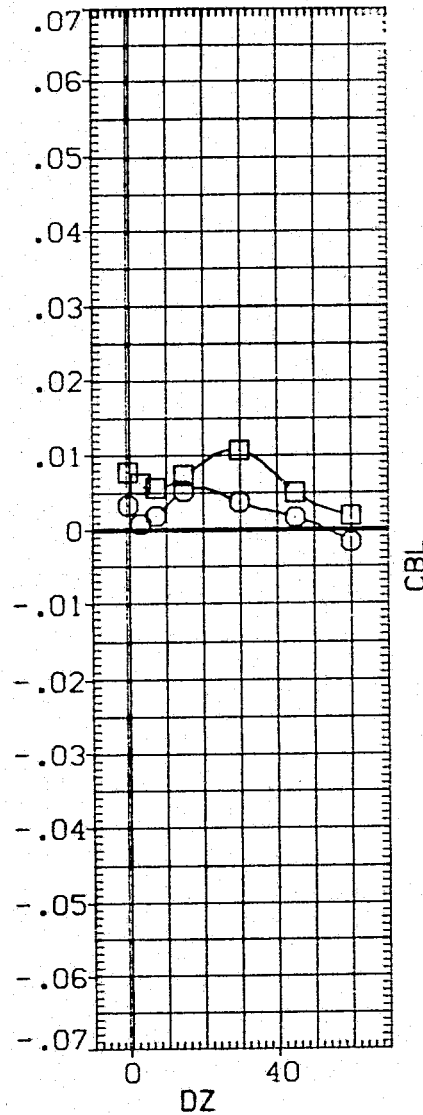
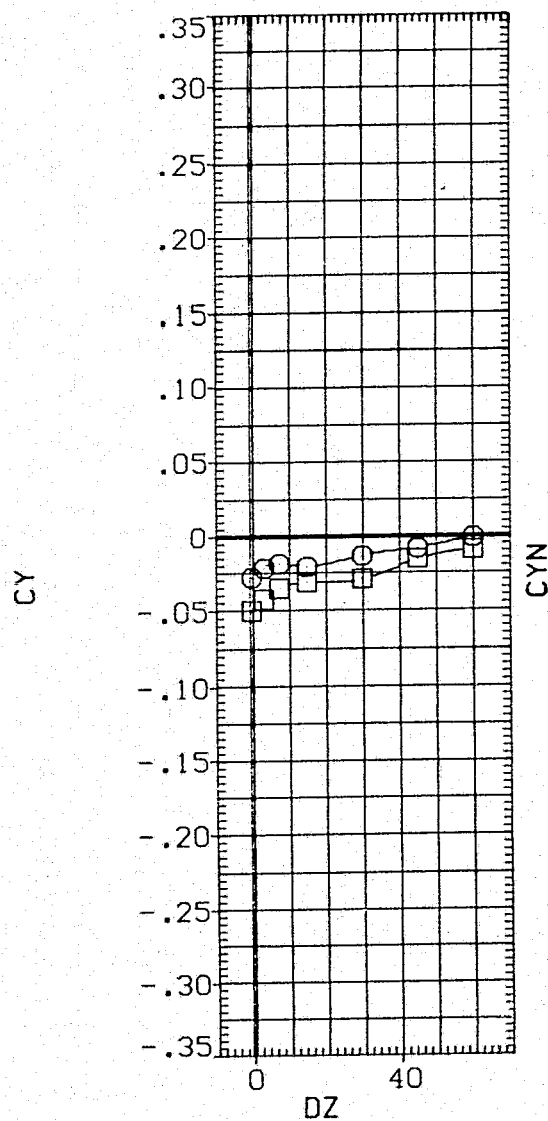


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ELV-1B .000	ELV-0B 3.000
□	14.000	ELEVON 5.000	MACH .600
		PHI 7.500	BETA0 -5.000
		BETAC .000	DY 10.000
		DX .000	ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

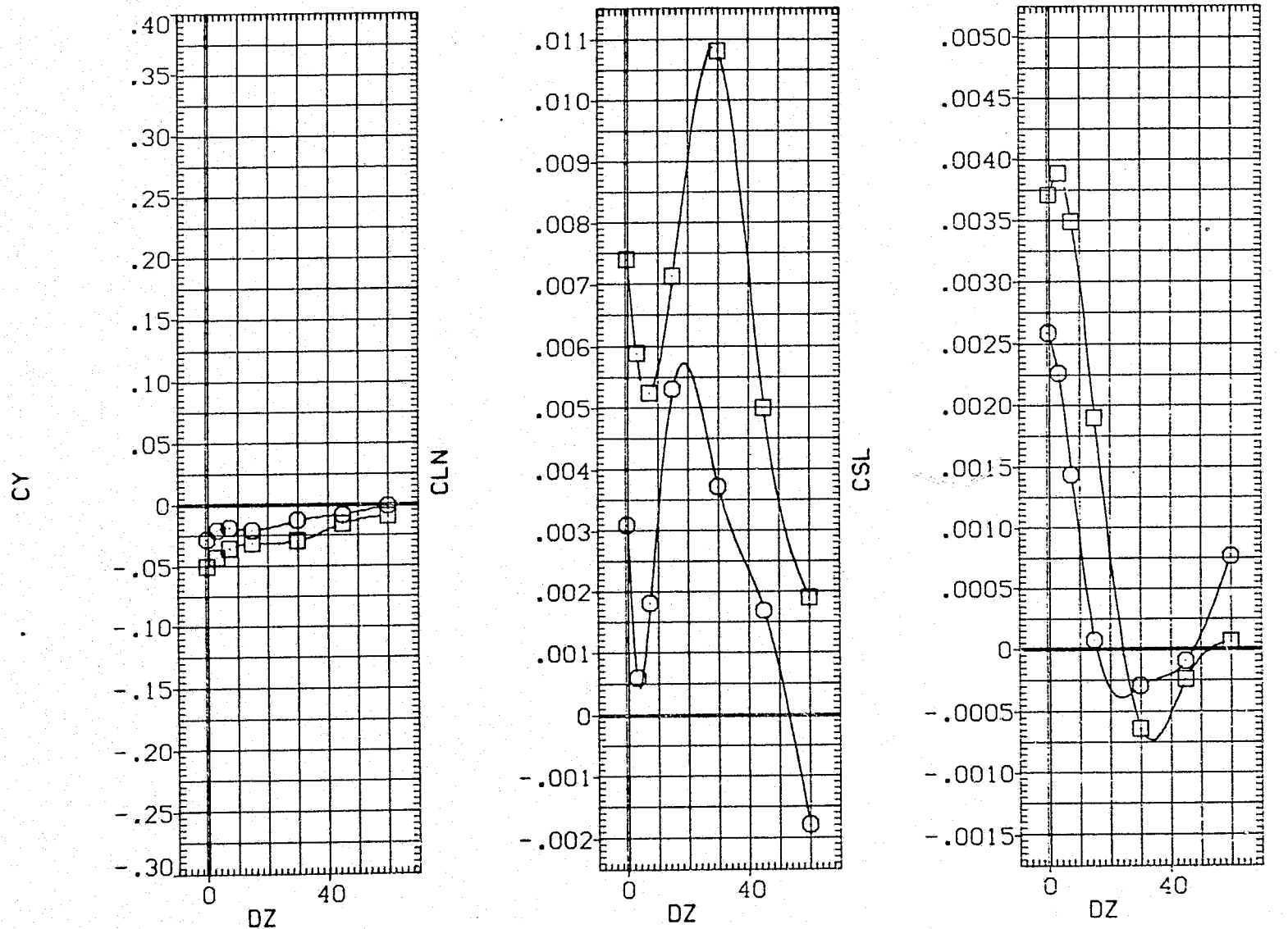


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRRP	1335.9000	IN.YC
YMRRP	.0000	IN.YC
ZMRRP	123.8300	IN.ZC
SCALE	.0300	

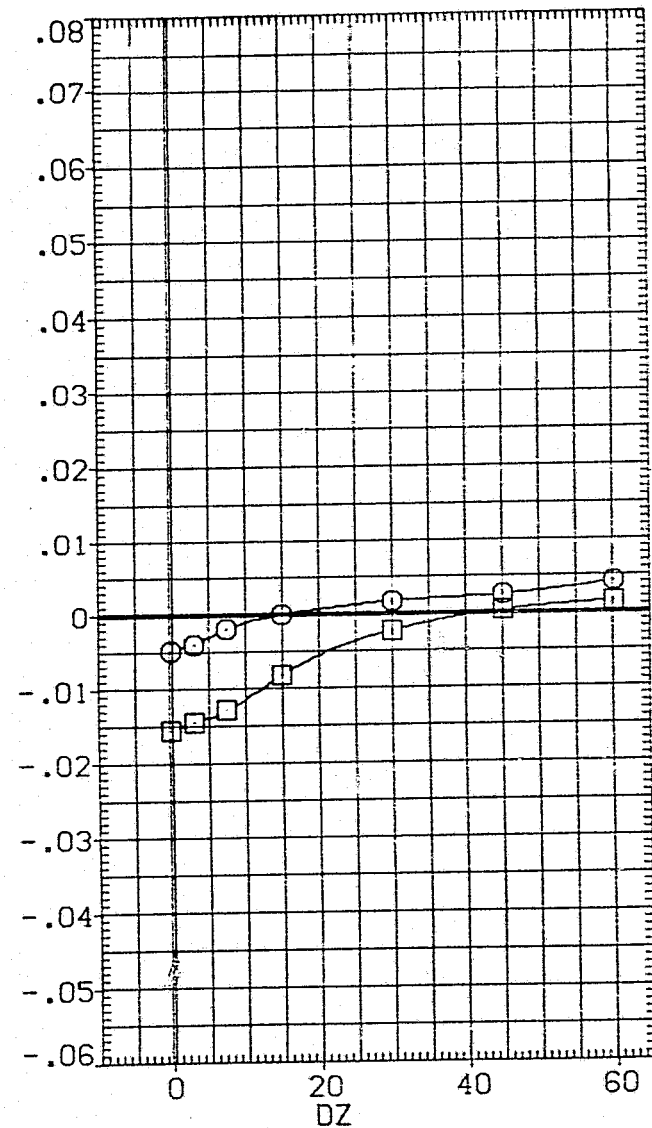
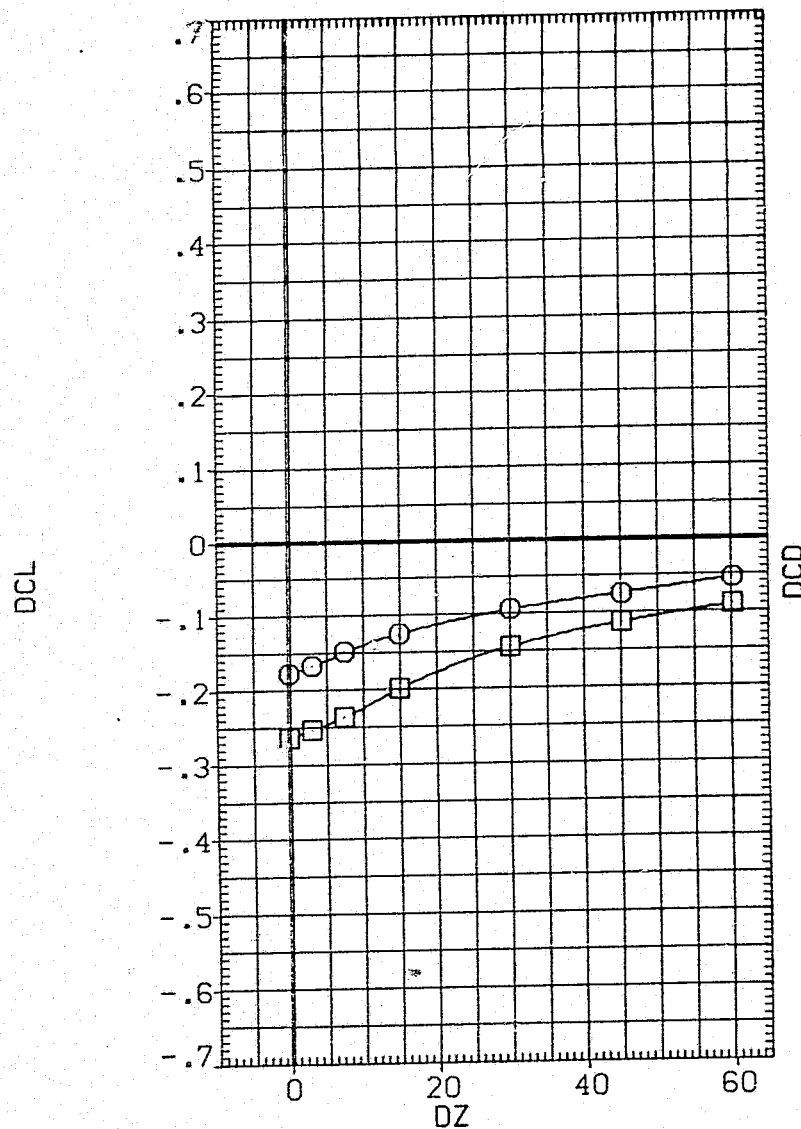


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

7.500

10.000

BETAC

ELV-0B

MACH

DX

BETA0

.000

3.000

.600

.000

-5.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

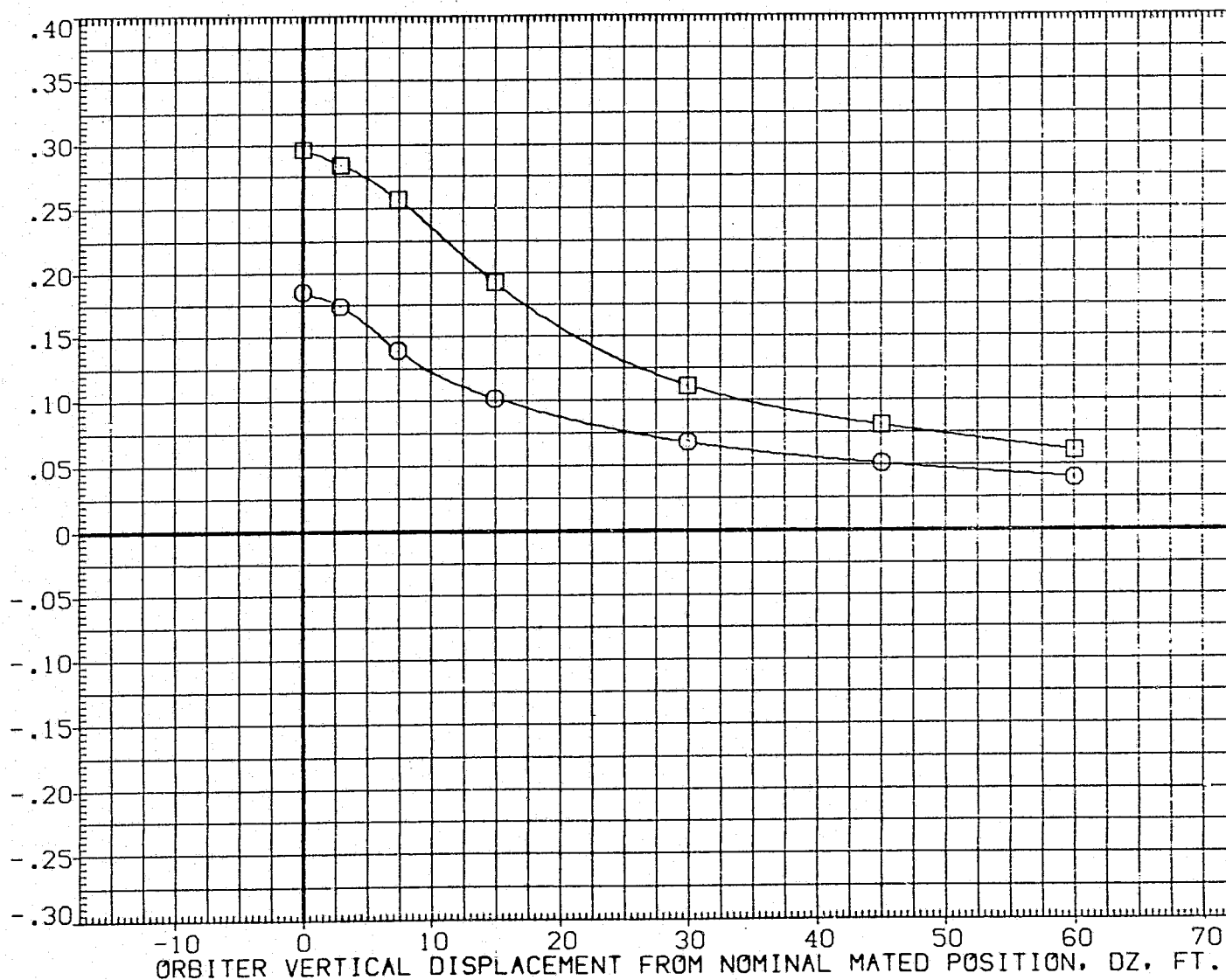


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
□	14.000	ELV-18	.000	ELV-08	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2343.0400	IN.
XMRP	1338.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

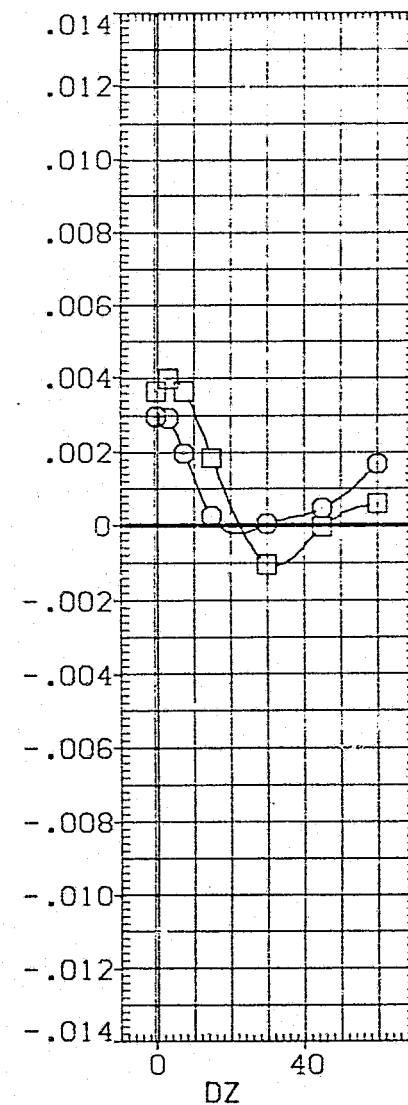
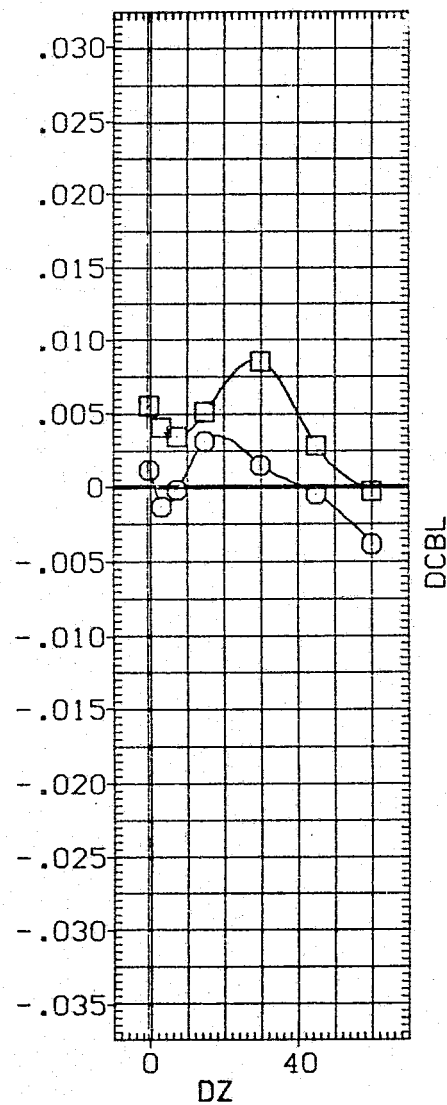
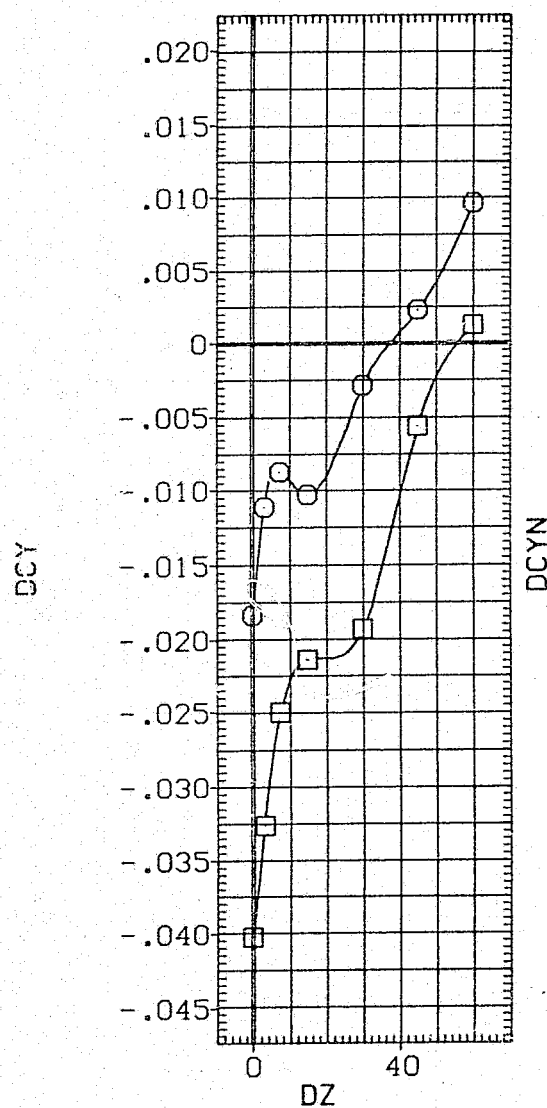


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 (747/1 01 S1) - (747/1)

D/S (098 - 035) (UGN098)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC .000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX .000
		DY 10.000 BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.XC
YMRF	.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

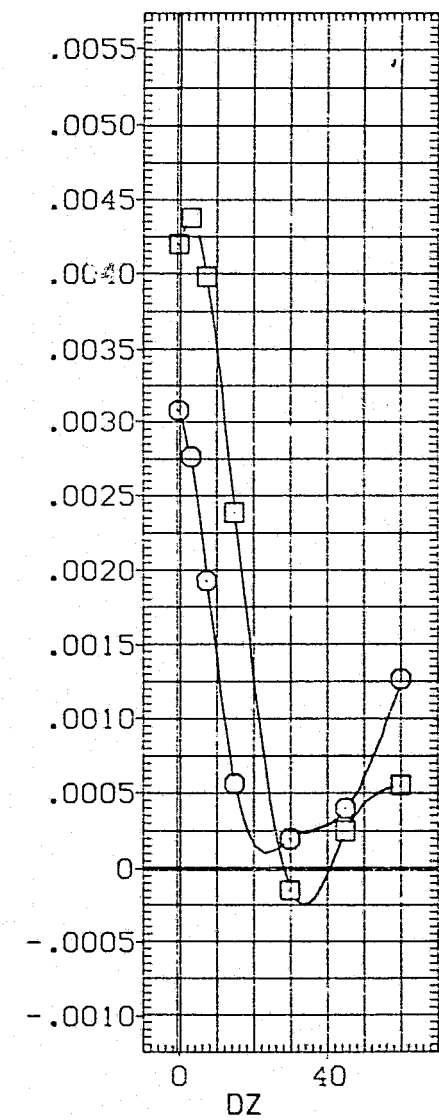
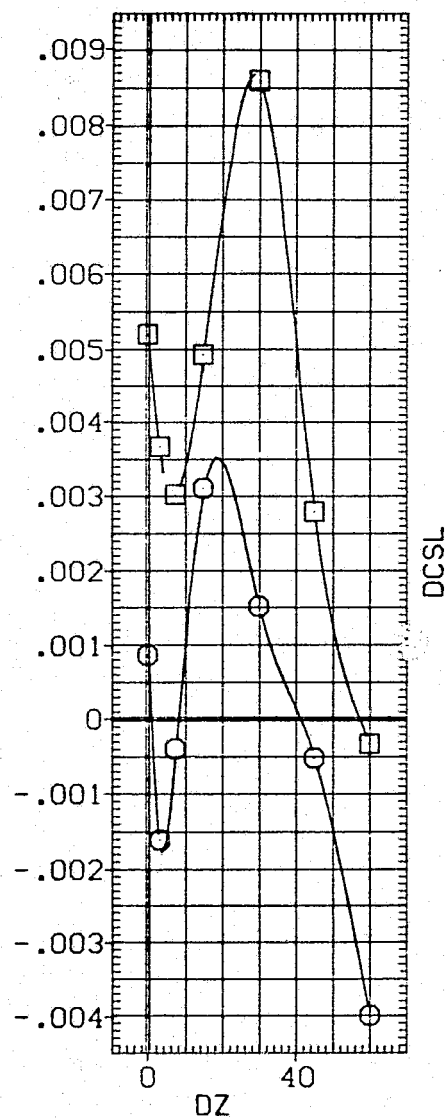
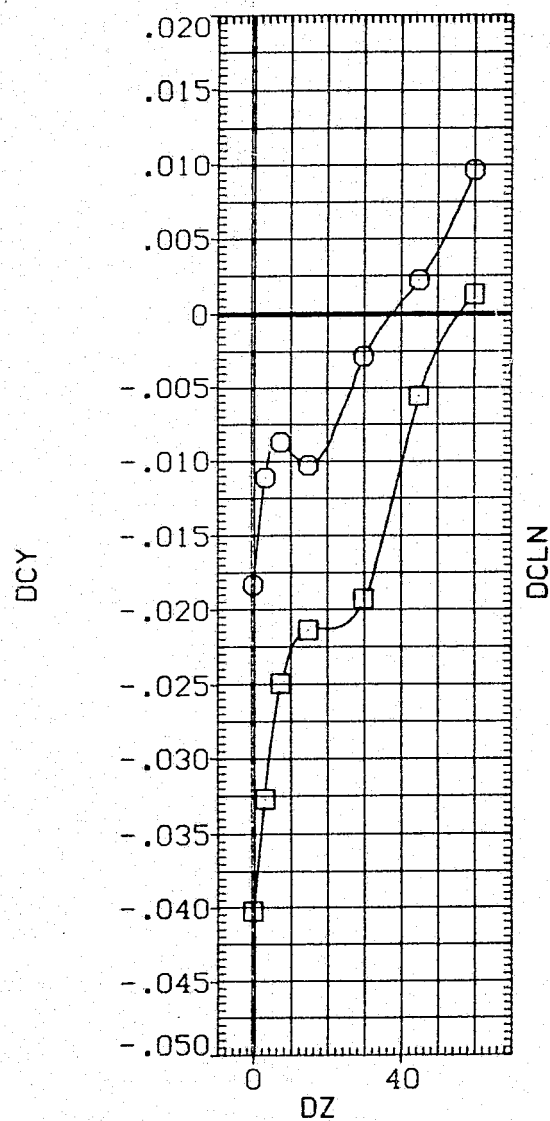


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-1B

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.000L SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

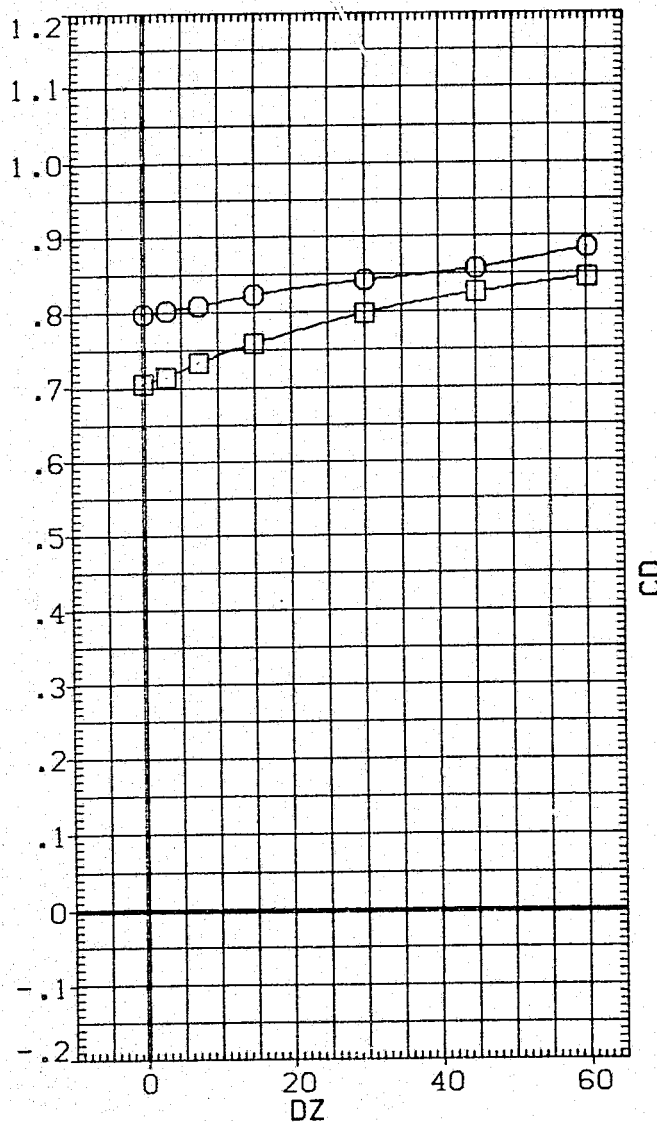
XMRP 135.3000 IN.

YMRP .0000 IN.

ZMRP 190.8000 IN.

SCALE .0300

CL



CD

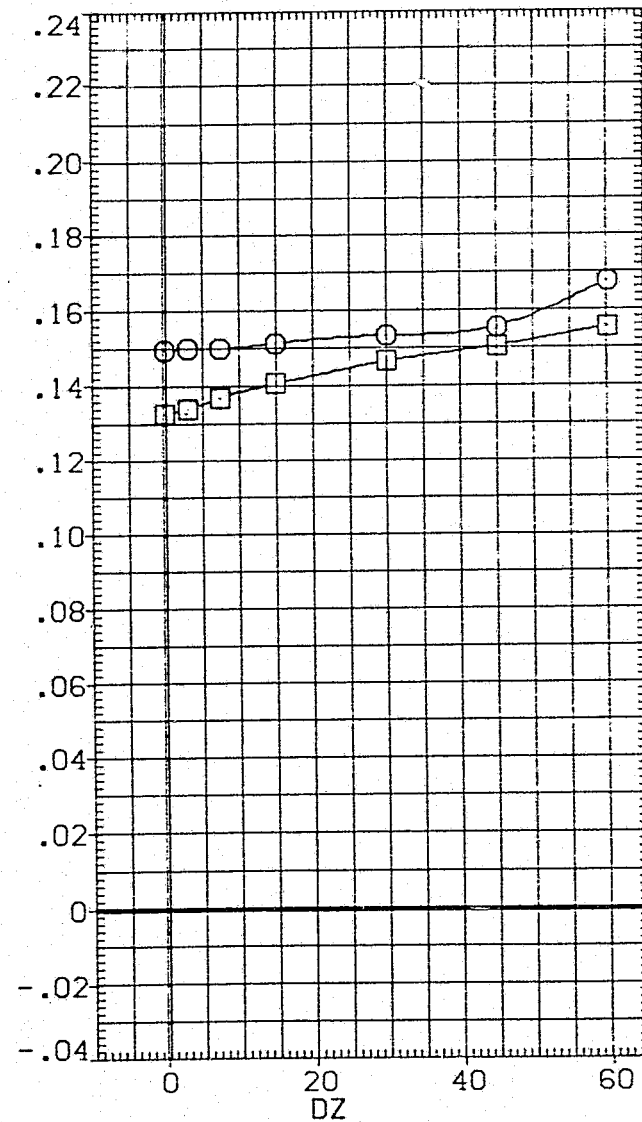


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

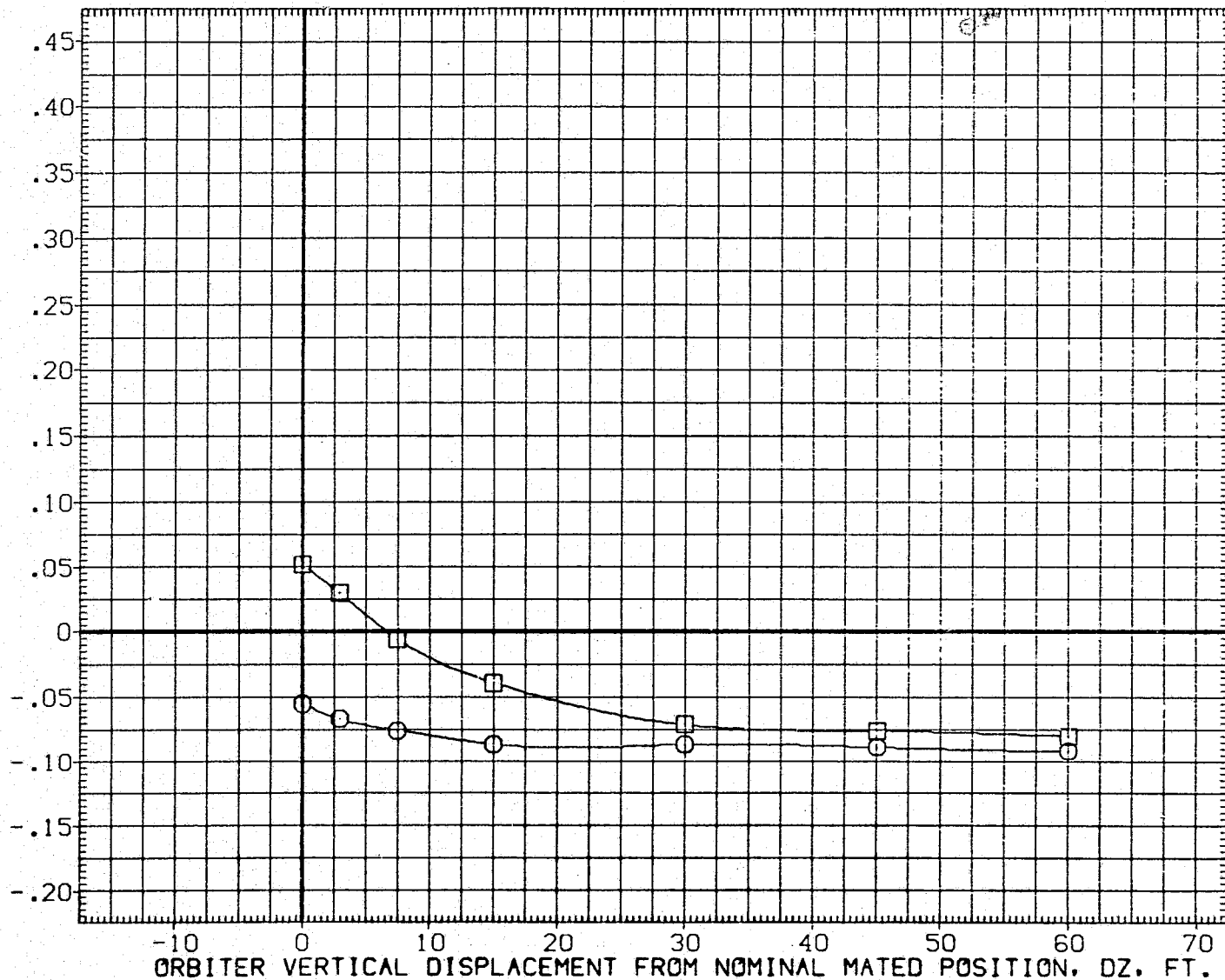


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1373.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

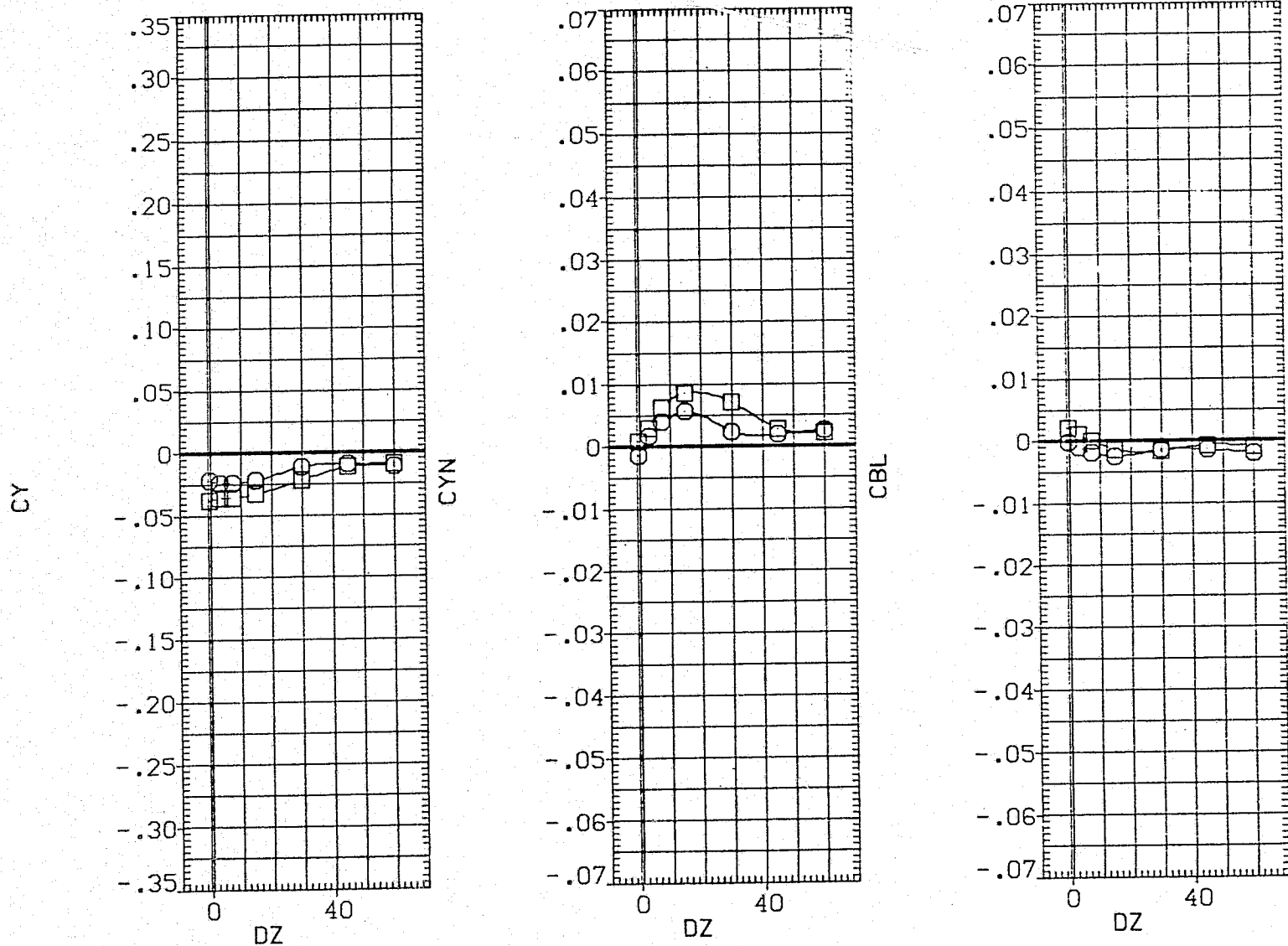


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

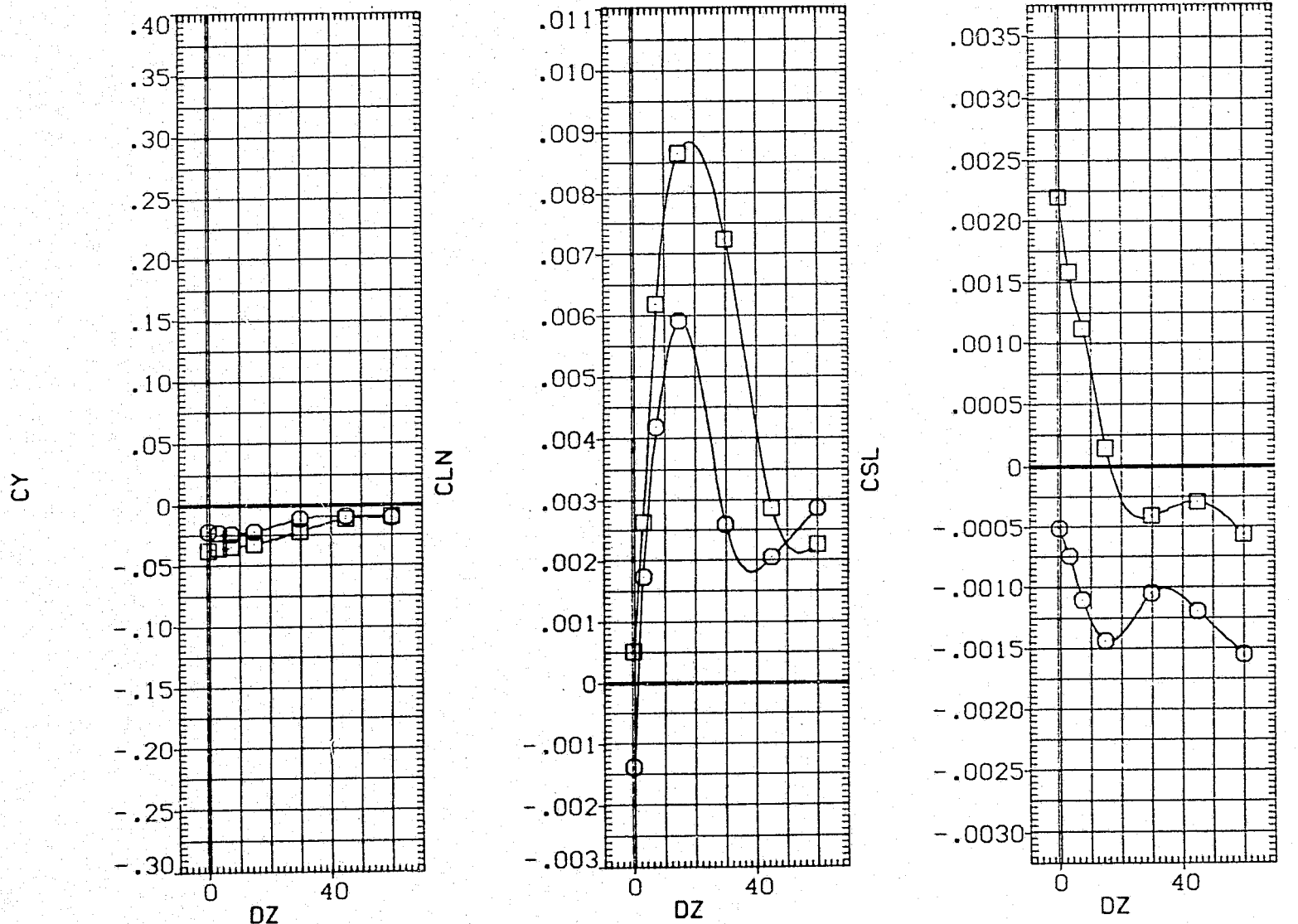


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SREF
LREF	327.7800	IN.
BREF	2349.0400	IN.
XMRP	1338.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

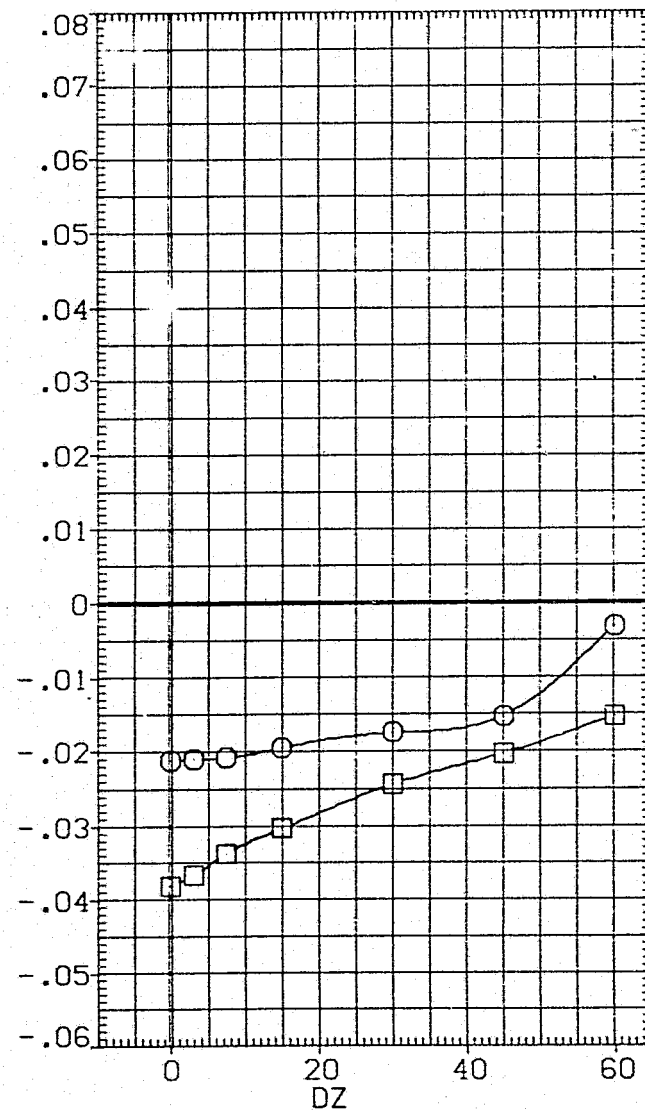
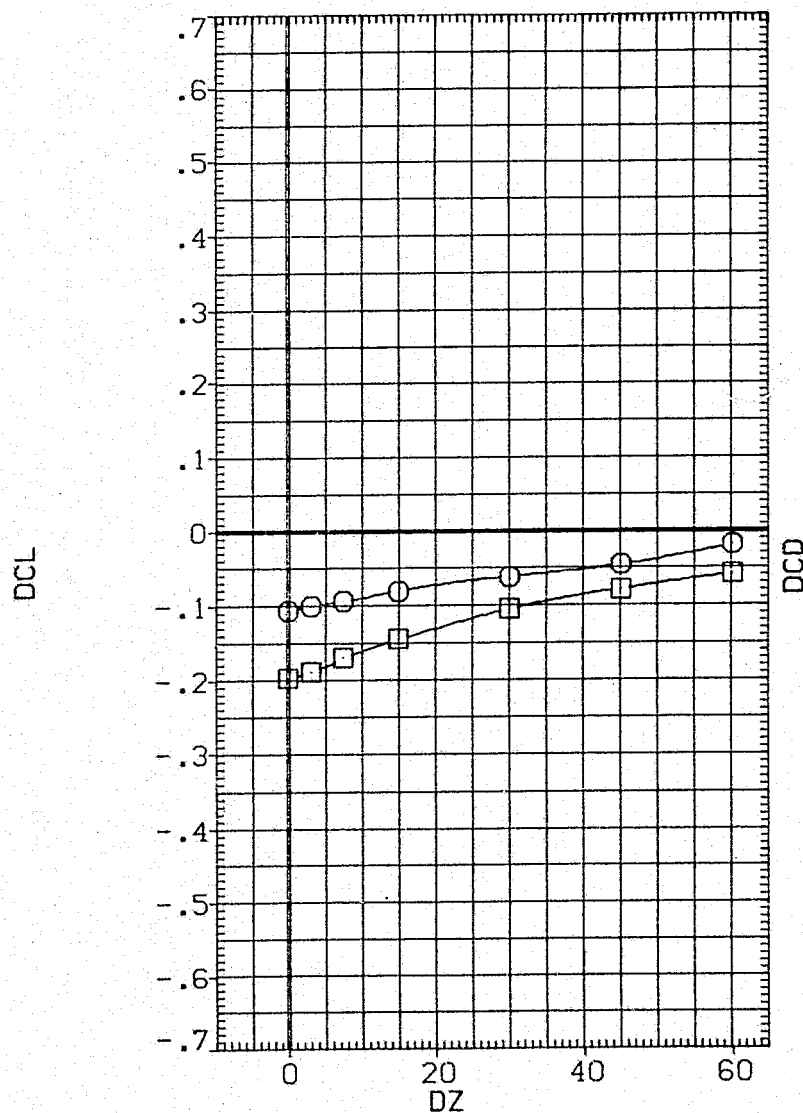


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL
○
□

ALPHA0
10.000
14.000

PARAMETRIC VALUES

ALPHAC	8.000	BETAC	.000
ELV-1B	.000	ELV-0B	3.000
ELEVON	5.000	MACH	.600
PHI	7.500	DX	.000
DY	10.000	BETA0	-5.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.8000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCIM

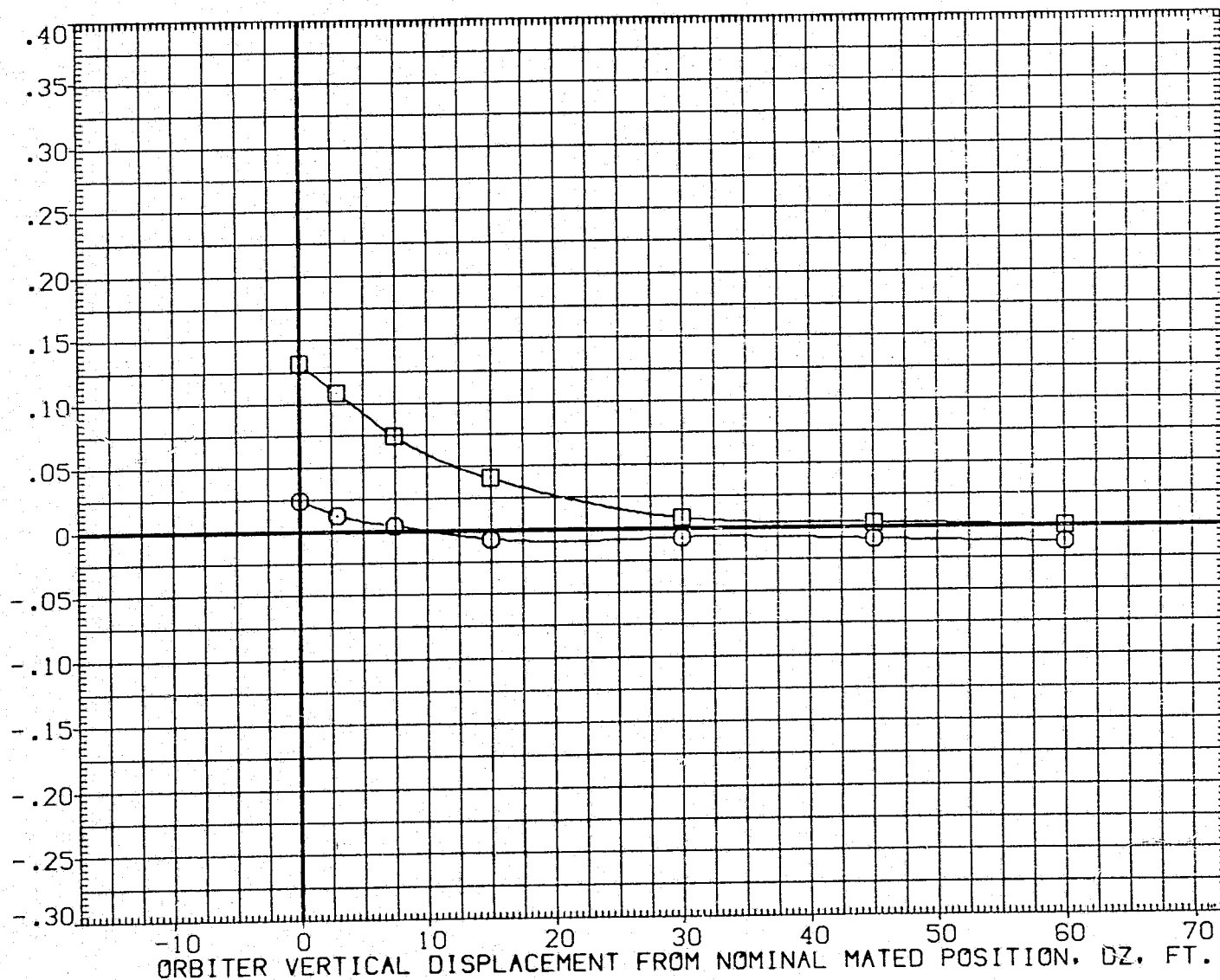


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES		
○	10.000	ALPHAC 8.000	BETAC	.000
□	14.000	ELV-1B .000	ELV-0B	3.000
		ELEVON 5.000	MACH	.600
		PHI 7.500	DX	.000
		DY 10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
XMRP	1.39.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

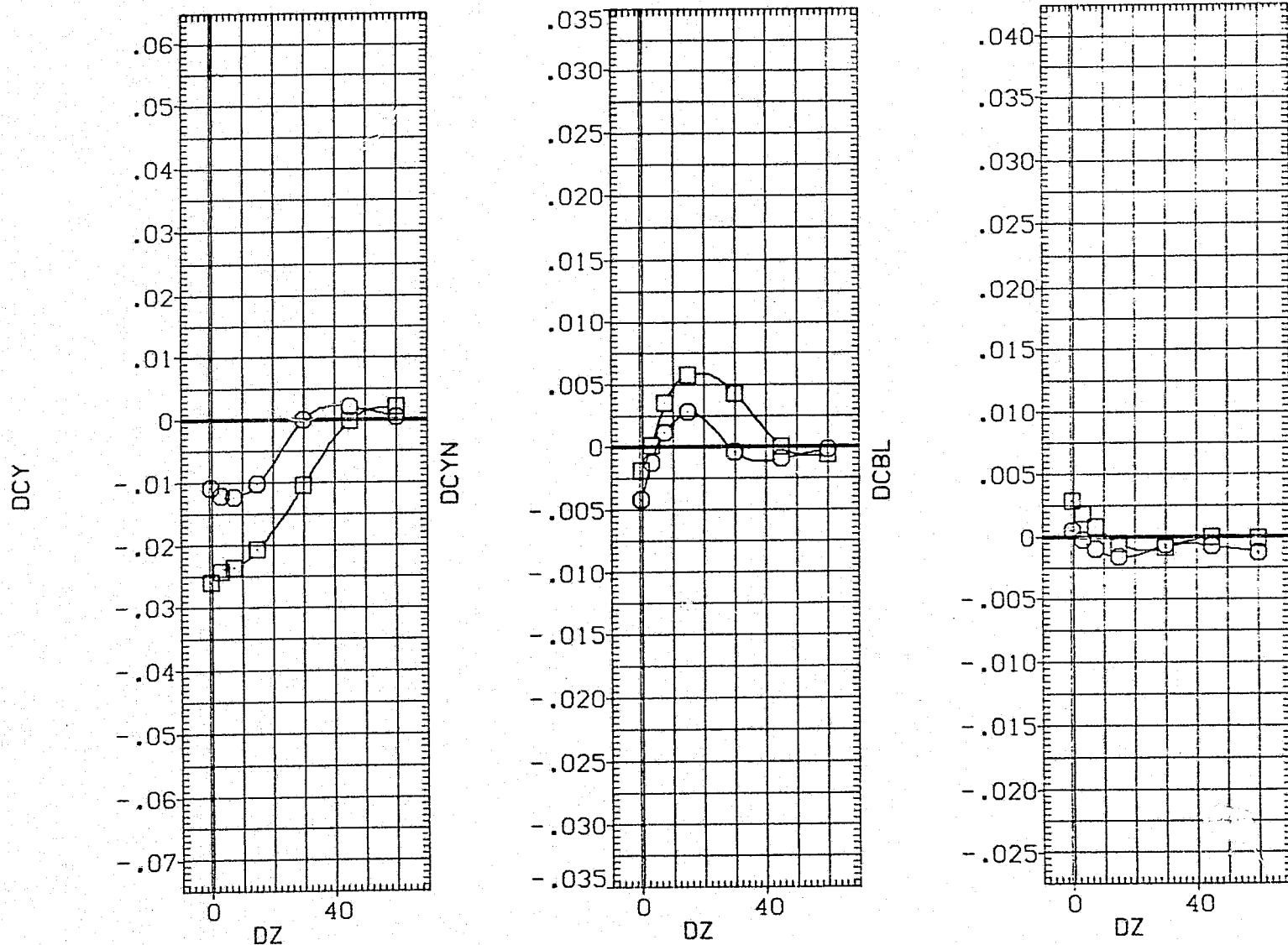


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES			
	10.000	ALPHAC	8.000	BETAC	.000	
○	14.000	ELV-1B	.000	ELV-0B	3.000	
□		ELEVON	5.000	MACH	.600	
		PHI	7.500	DX	.000	
		DY	10.000	BETA0	-5.000	

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

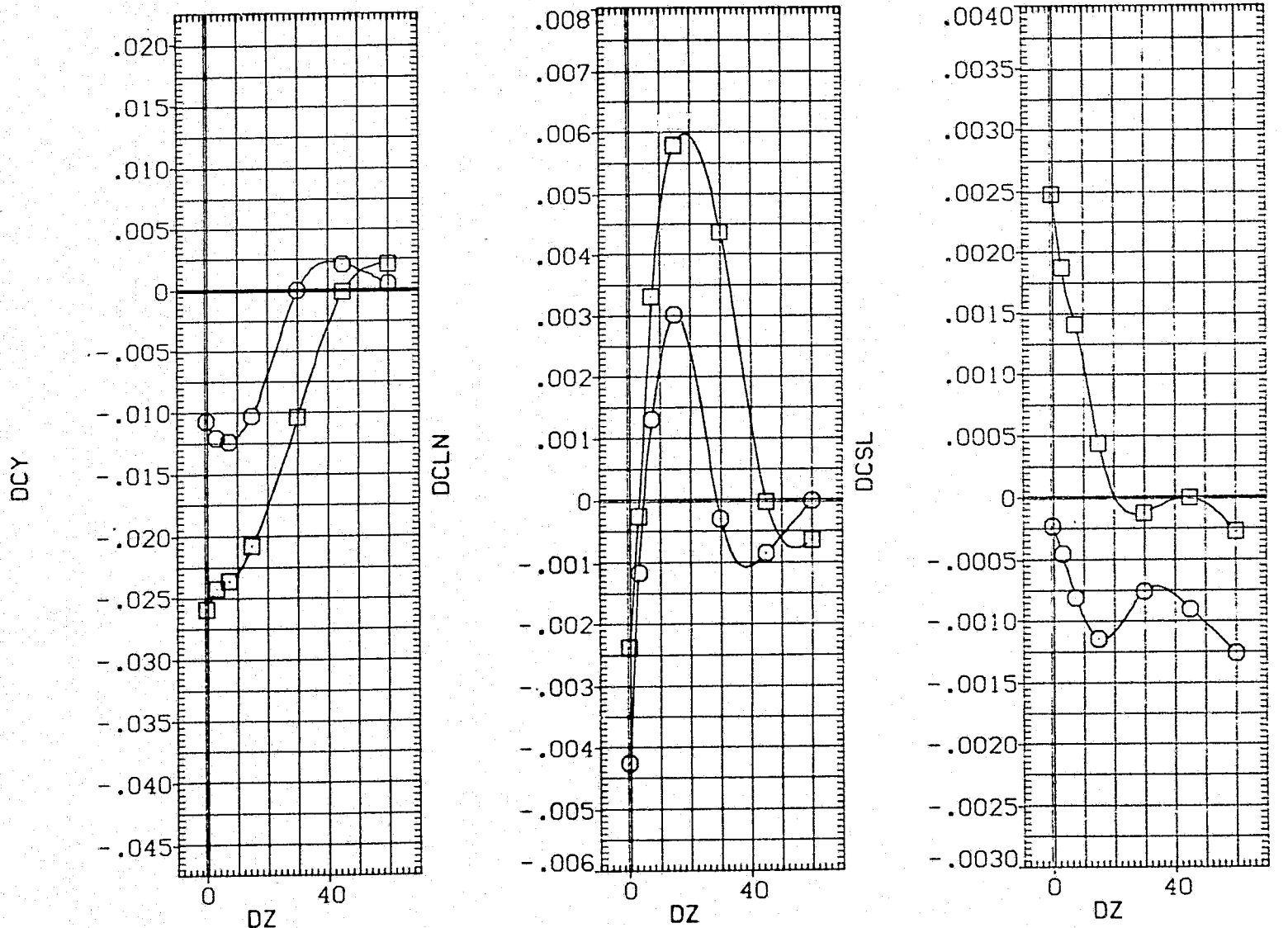


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB	
○	10.000	.000		3.000	
□	14.000	5.000		.600	
		BETA0	-5.000	BETAC	5.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.8000	IN.XC
YMRF	.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

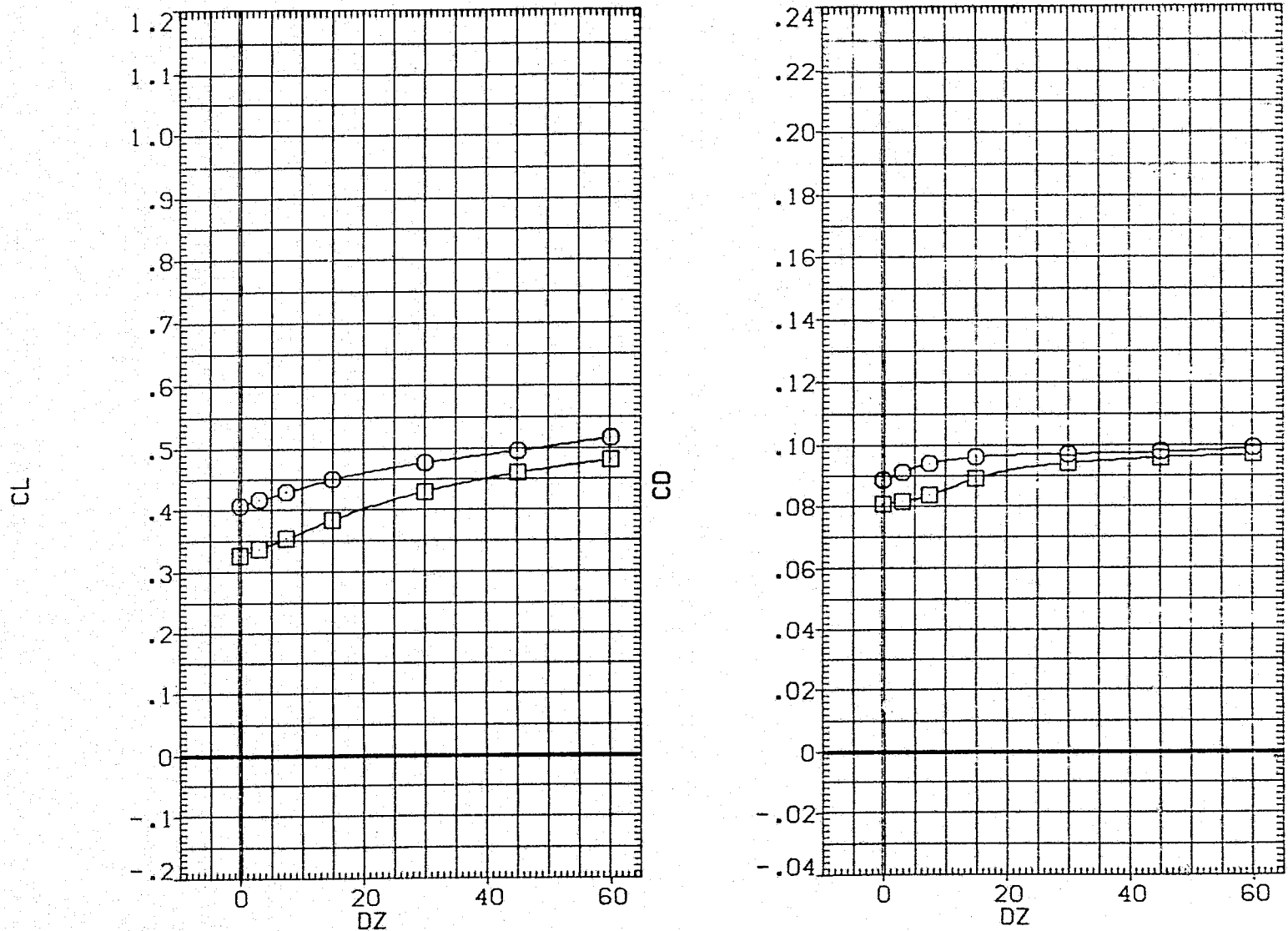


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	-5.000	BETAC	5.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

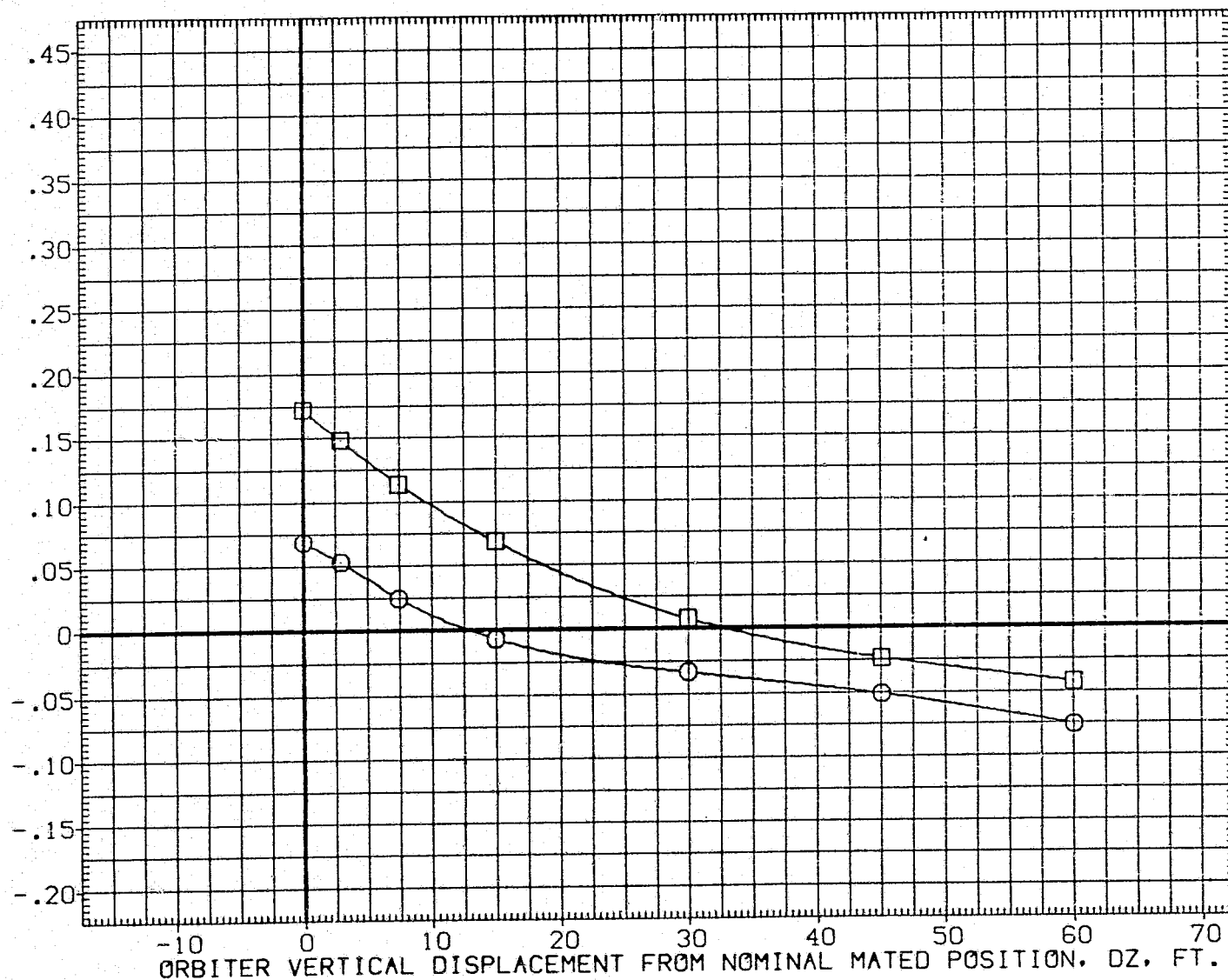


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

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CARRIER DATA (MGN100)

SYMBOL



ALPHA0

10.000

ELV-1B

ELEV0N

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

-5.000

7.500

.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

5.000

10.000

4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9300	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

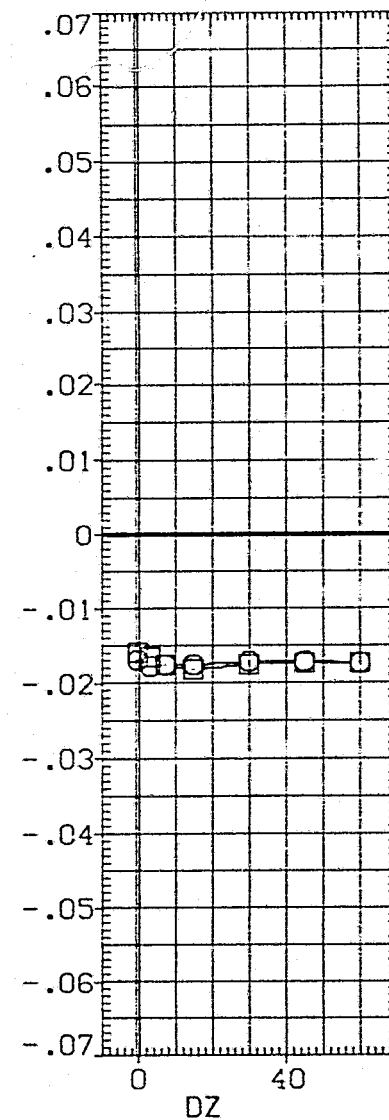
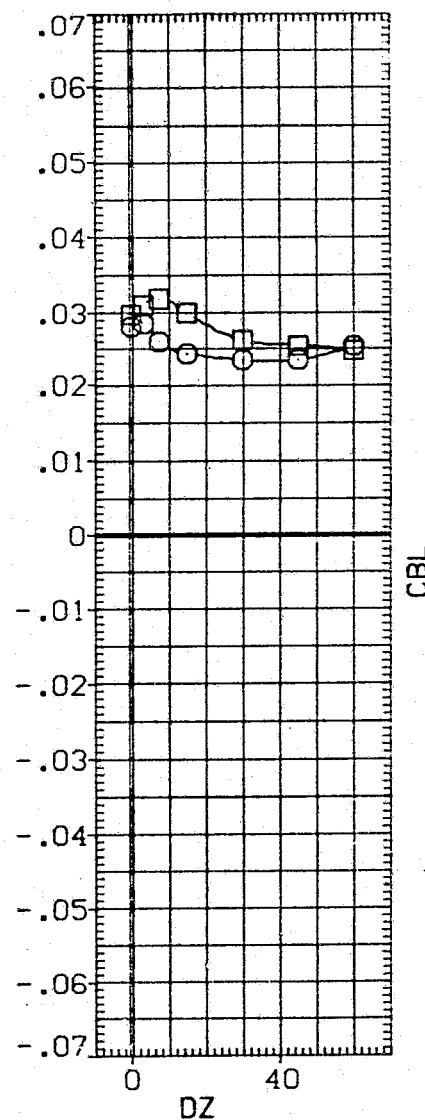
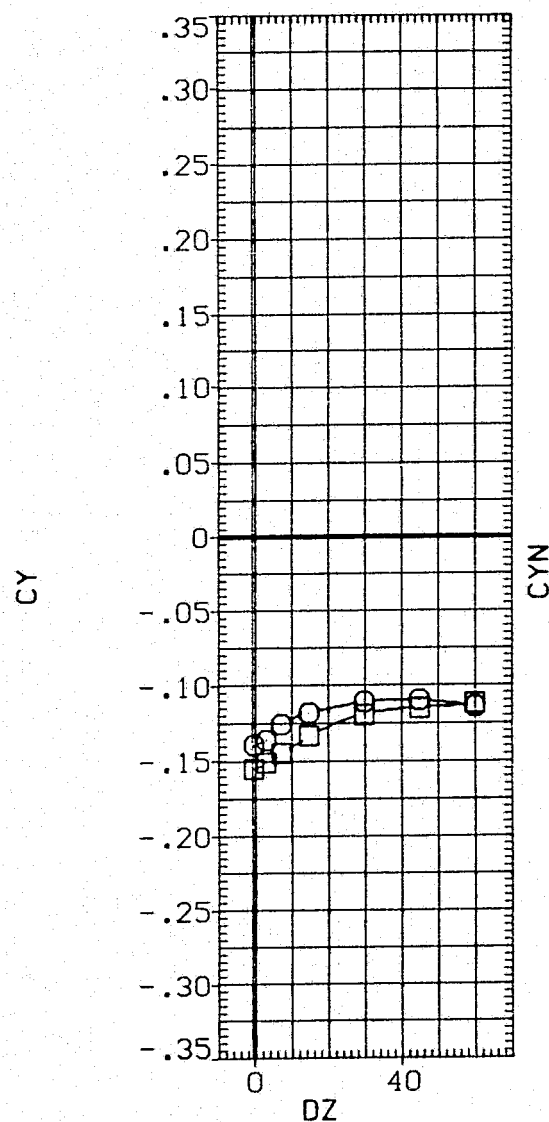


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	ELEVON	5.000	MACH
□	14.000	BETA0	-5.000	BETAC
		PHI	7.500	DY
		DX	.000	ALPHAC
				4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.8000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

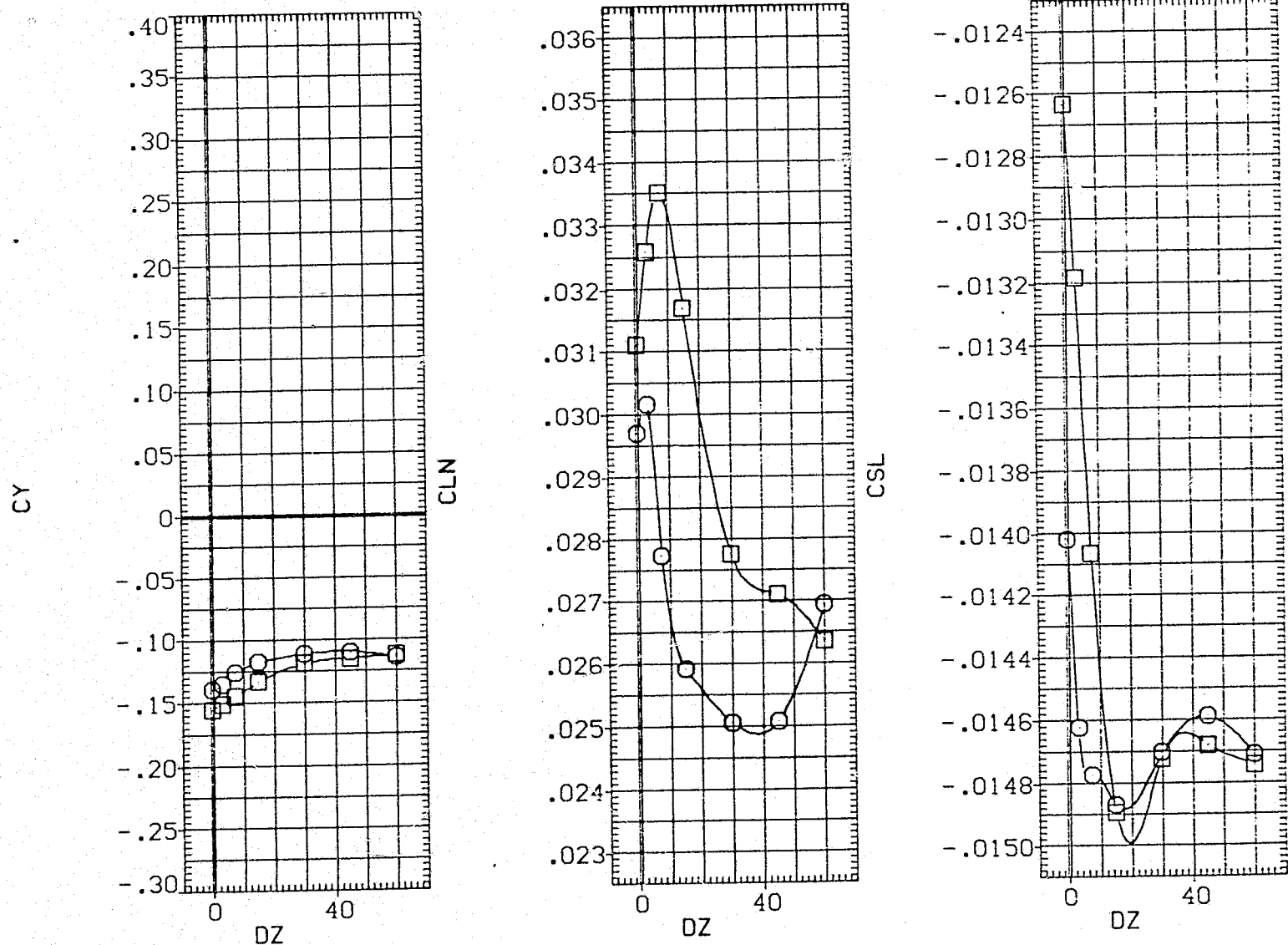


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 A1 PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9200	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

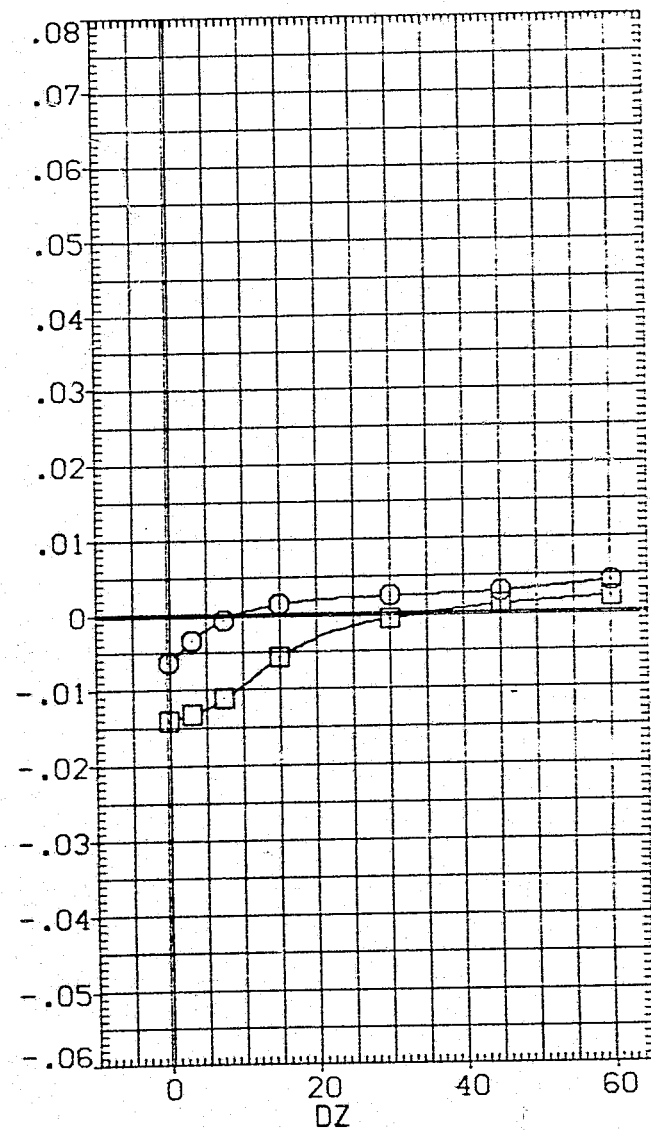
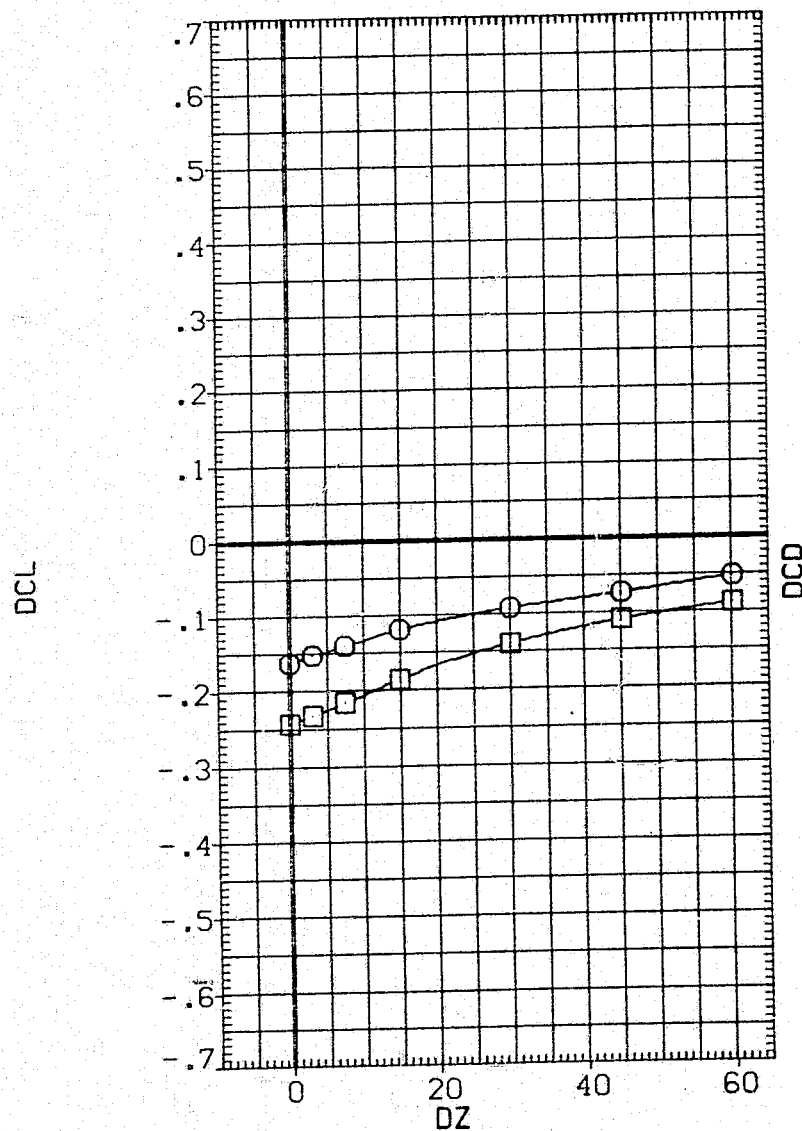


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

7.500

10.000

BETAC

ELV-0B

MACH

DX

BETA0

5.000

3.000

.600

.000

-5.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

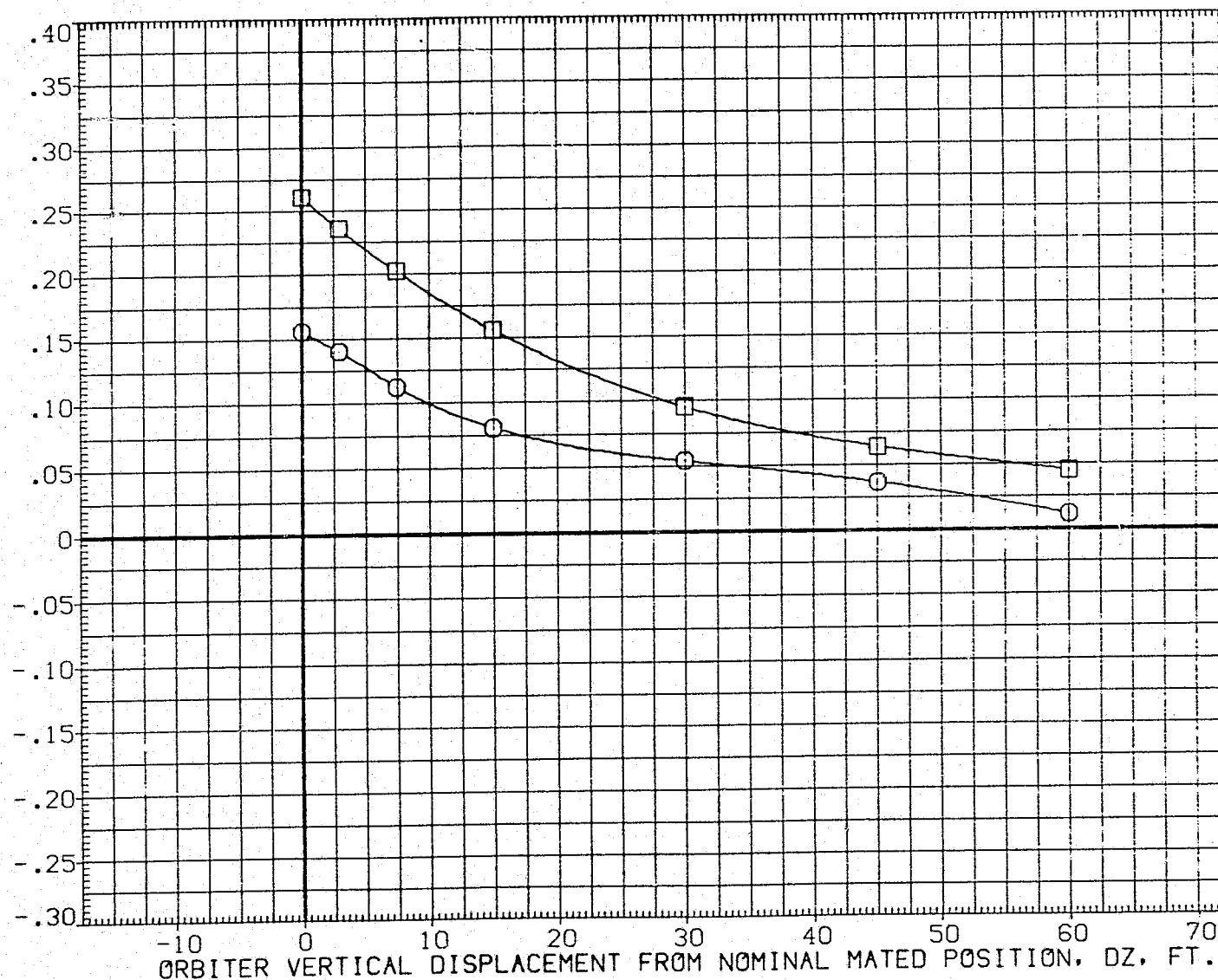


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL		PARAMETRIC VALUES			
○	ALPHA0	ALPHAC	4.000	BETAC	5.000
□	10.000	ELV-1B	.000	ELV-0B	3.000
	14.000	ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	50.000
LREF	300.0000	10.000
BREF	2000.0000	10.000
XMRP	1000.0000	10.000
YMRP	.0000	10.000
ZMRP	190.8000	10.000
SCALE	.0300	

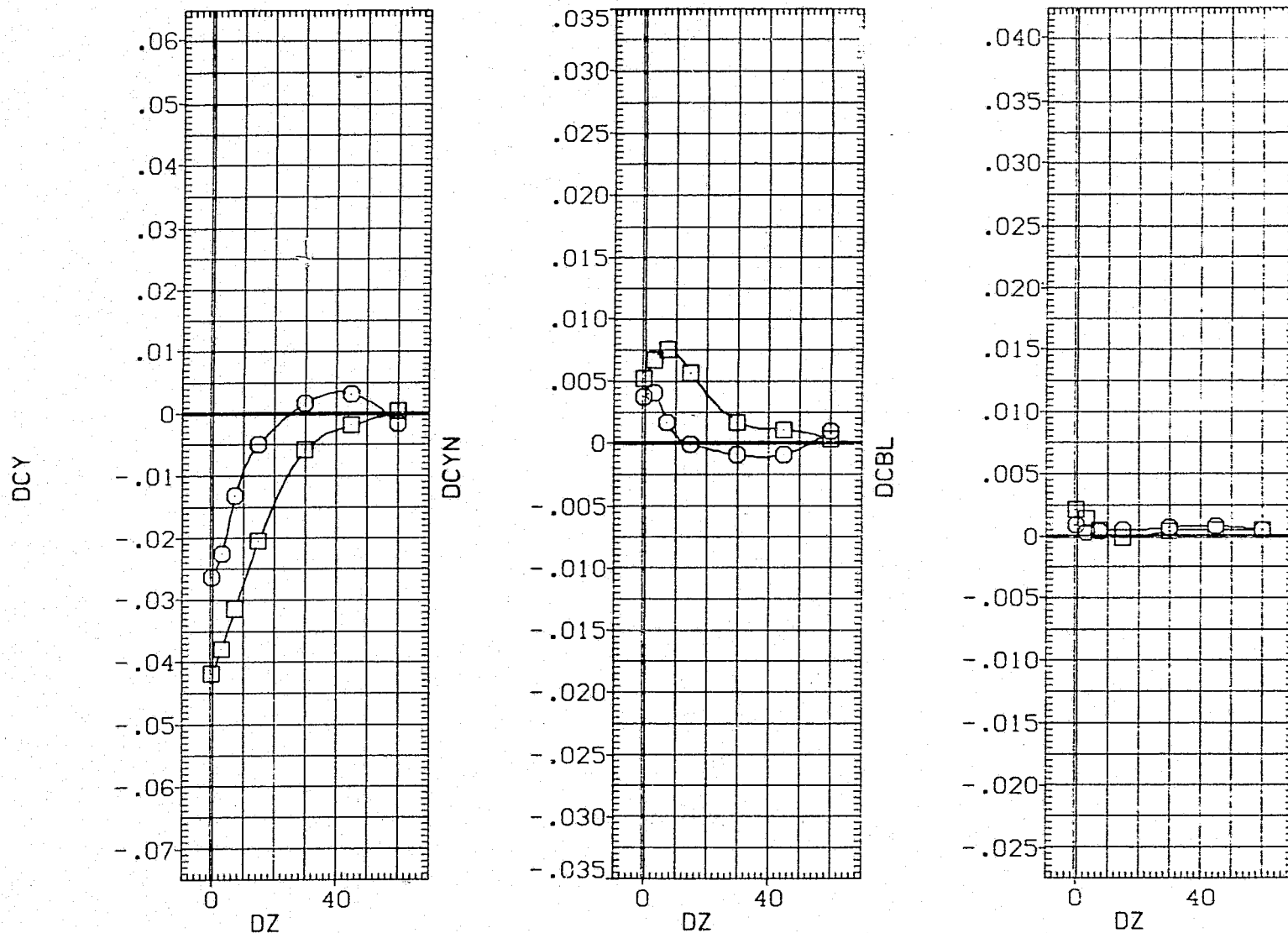


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	ELV-1B	4.000	5.000
□	14.000	ELEVON	.000	ELV-0B
		PHI	5.000	MACH
		GY	7.500	DX
			10.000	BETA0
				-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
AMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

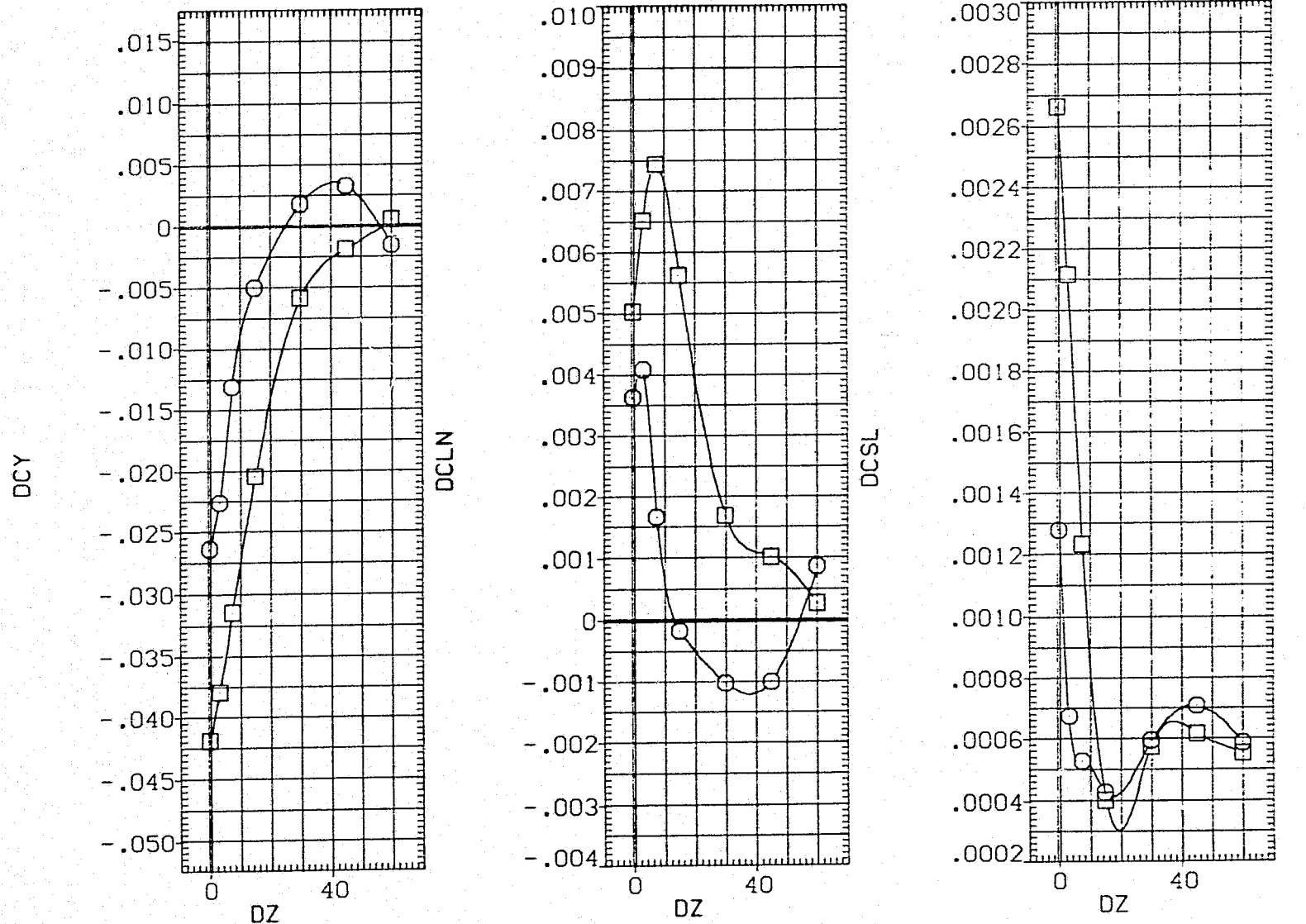


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ELV-1B

ELEVON

PHI

BETAC

DX

PARAMETRIC VALUES

.000

5.000

7.500

5.000

.000

ELV-0B

MACH

BETA0

DY

ALPHAC

3.000

.600

-5.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1338.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

50.00

IN.

IN.

IN.XC

IN.YC

IN.ZC

CL

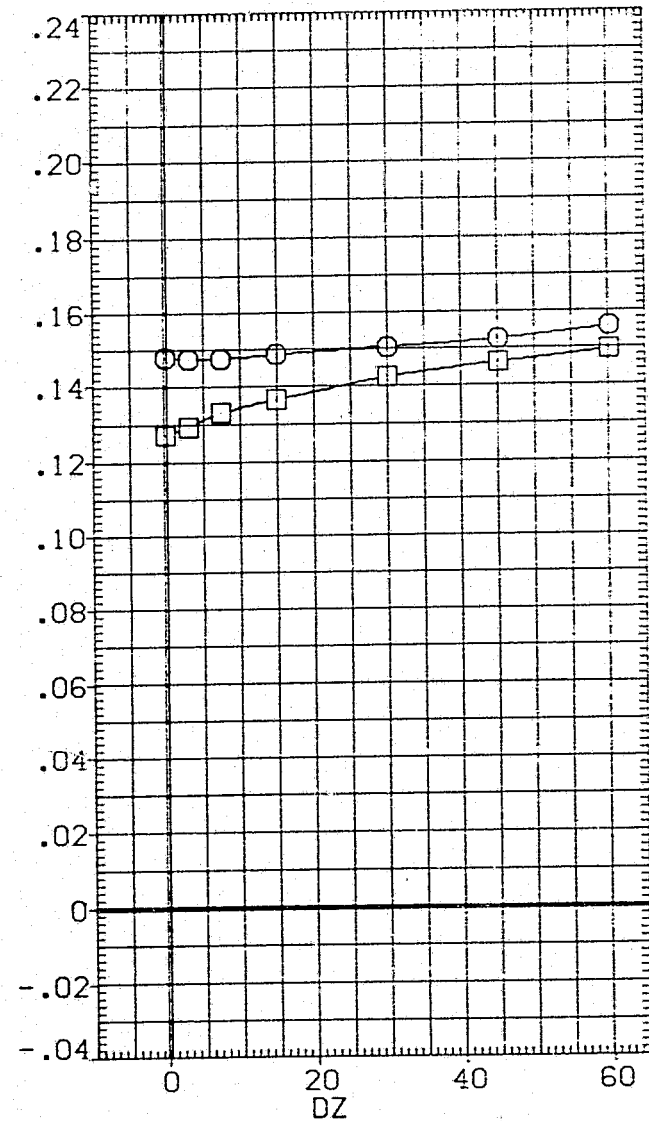
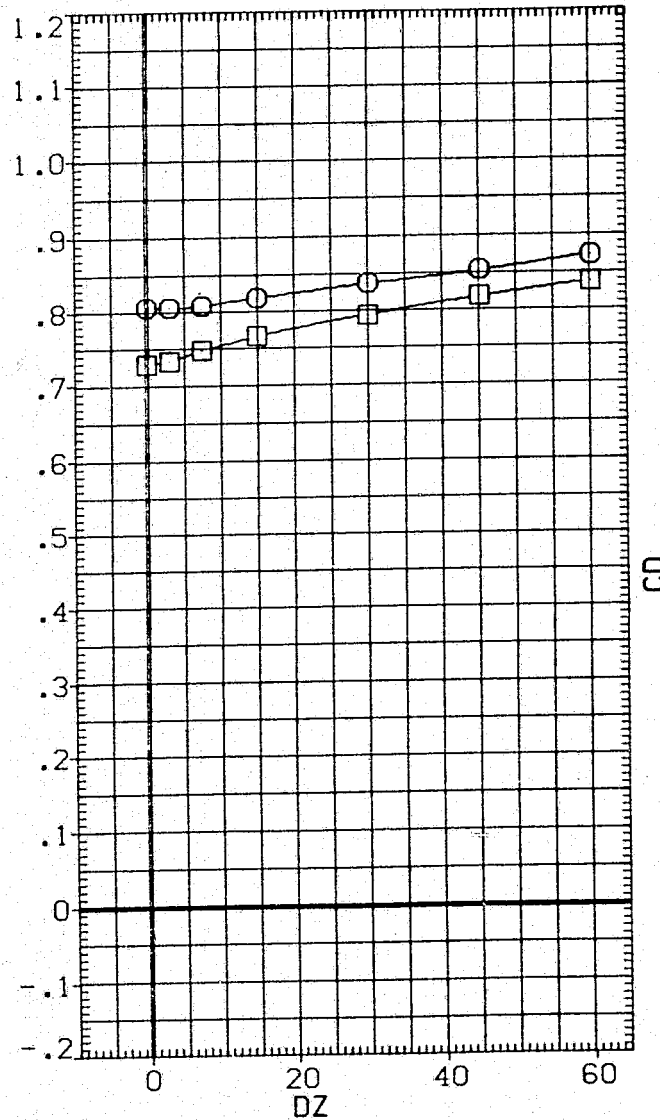


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	7.500	BETA0	-5.000
		BETAC	5.000	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

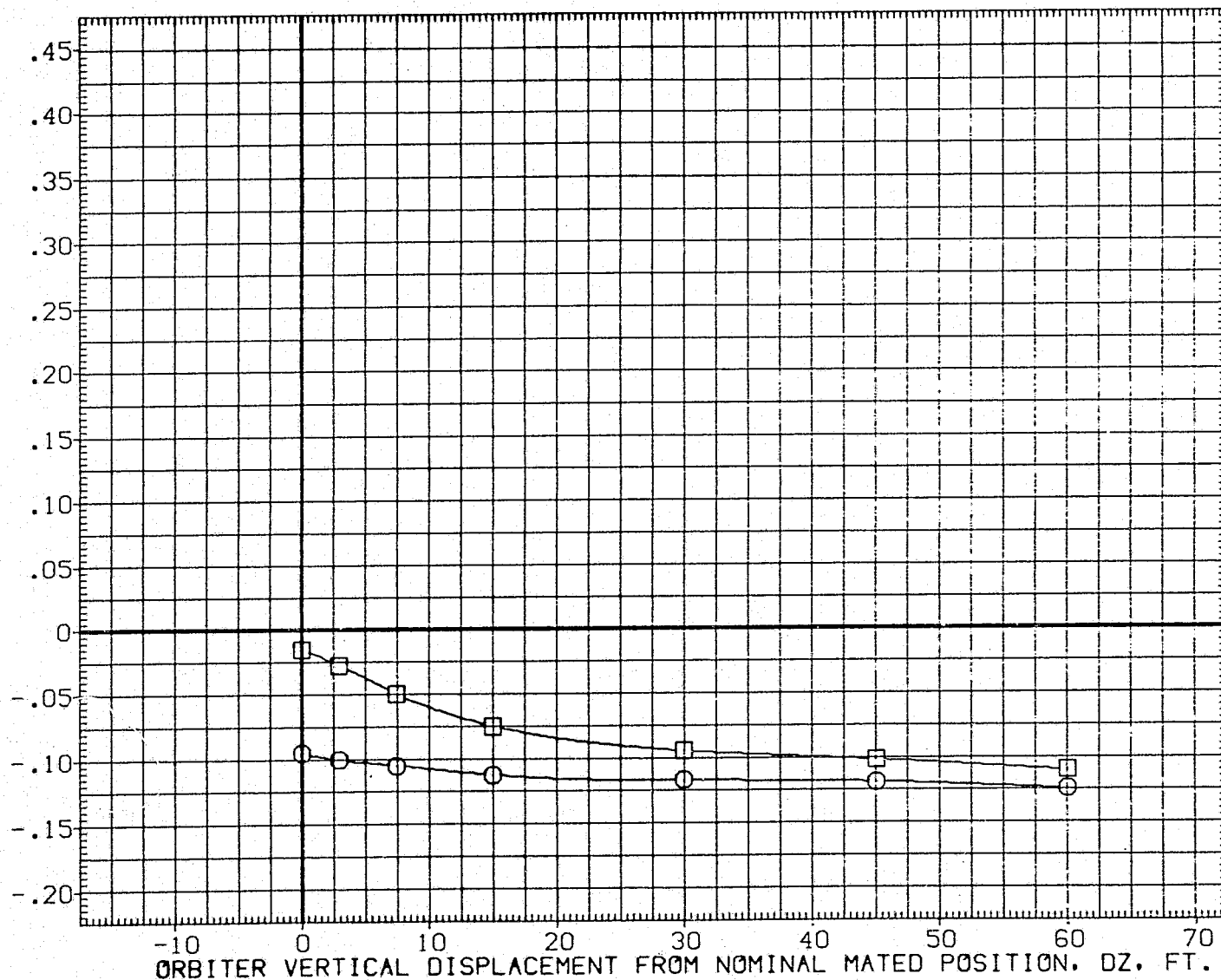


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

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CARRIER DATA (MGN10')

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	3.000	
□	14.000	PHI	5.000	.600	
		BETAC	7.500	BETA0	-5.000
		DX	5.000	DY	10.000
			.000	ALPHAC	8.000

REFERENCE INFORMATION

SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9200	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

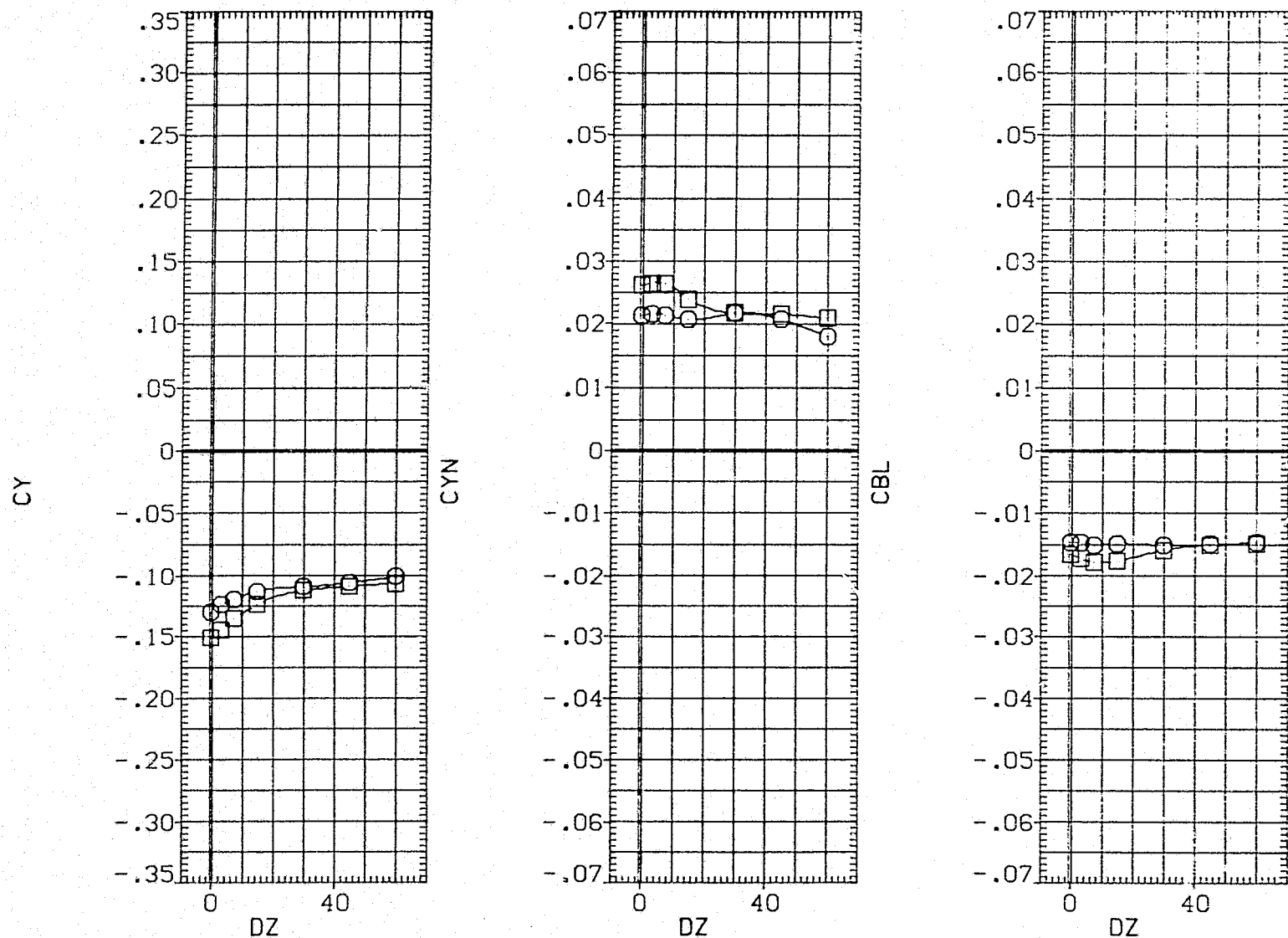


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	
○	10.000	ELEVON	.000	ELV-0B
□	14.000	PHI	5.000	MACH
		BETAC	7.500	BETA0
		DX	5.000	DY
			.000	ALPHAC
				8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

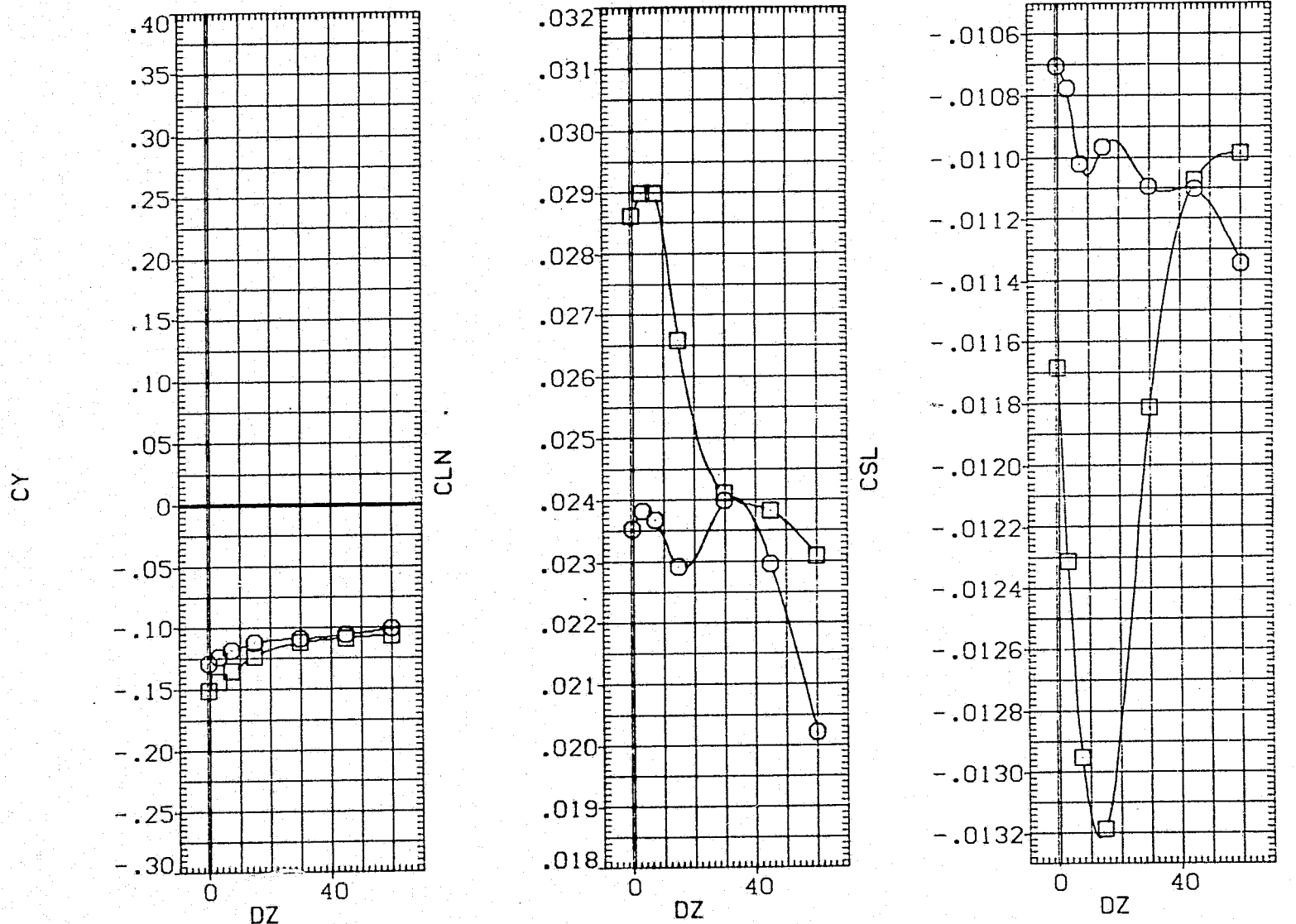


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	100.8000	IN.ZC
SCALE	.0300	

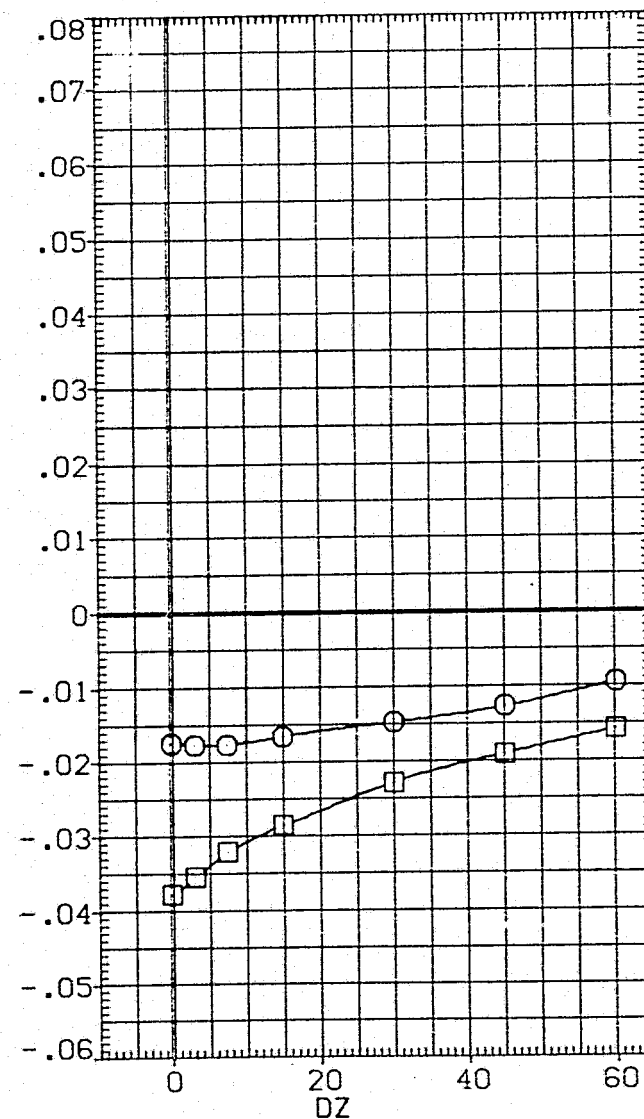
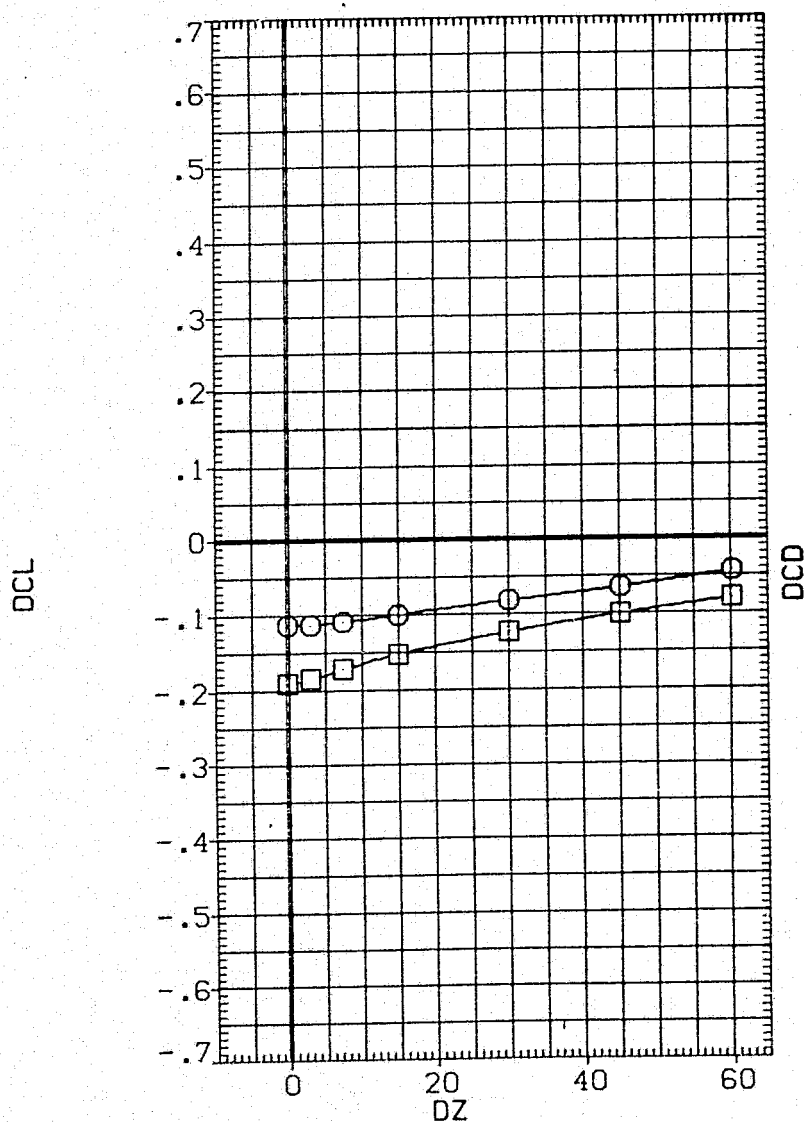


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL
○
□

ALPHA0
10.000
14.000

ALPHAC
ELV-1B
ELEVON
PHI
DY

PARAMETRIC VALUES
8.000
.000
5.000
7.500
10.000
BETAC
ELV-0B
MACH
DX
BETA0

5.000
3.000
.600
.000
-5.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

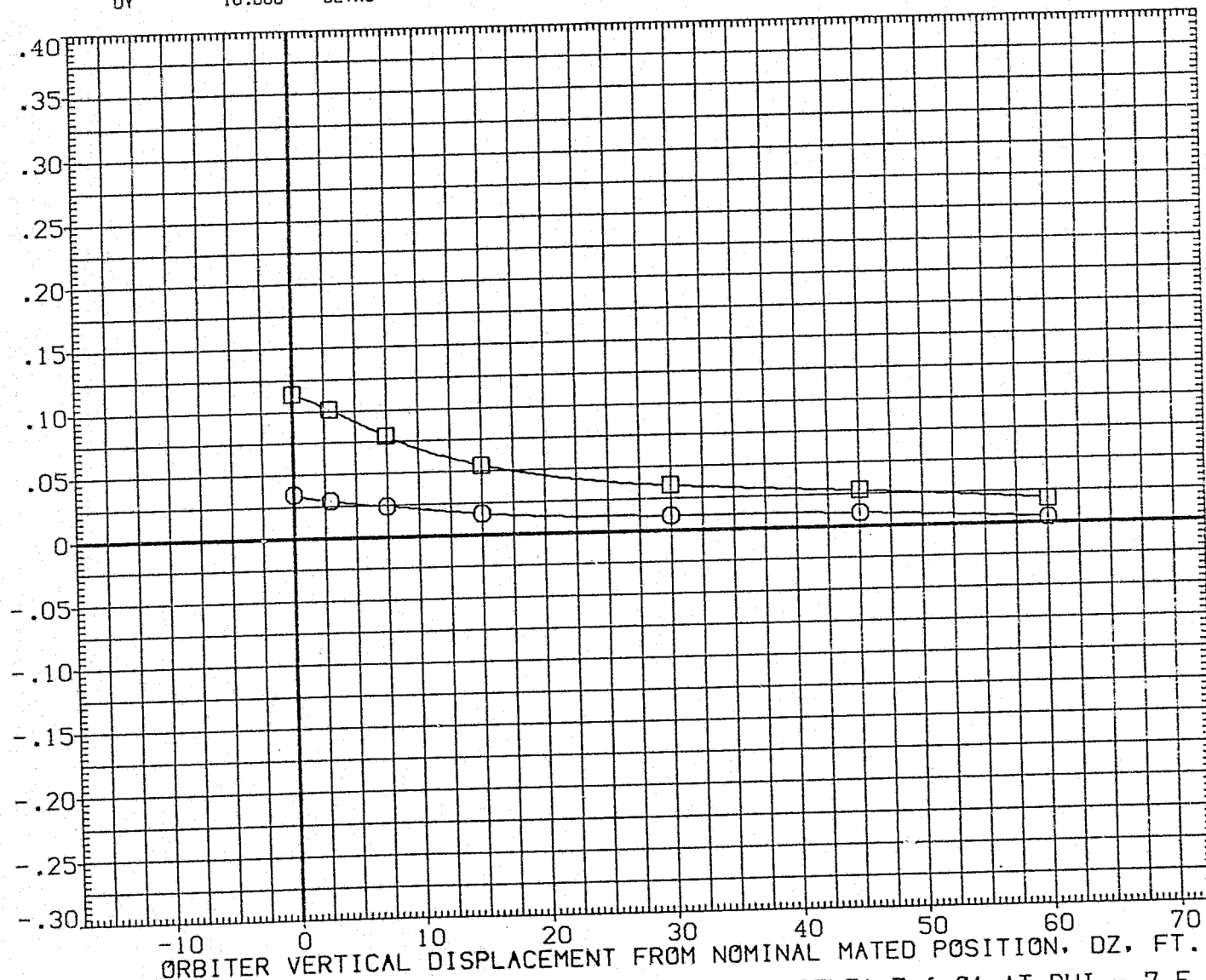


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	-5.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

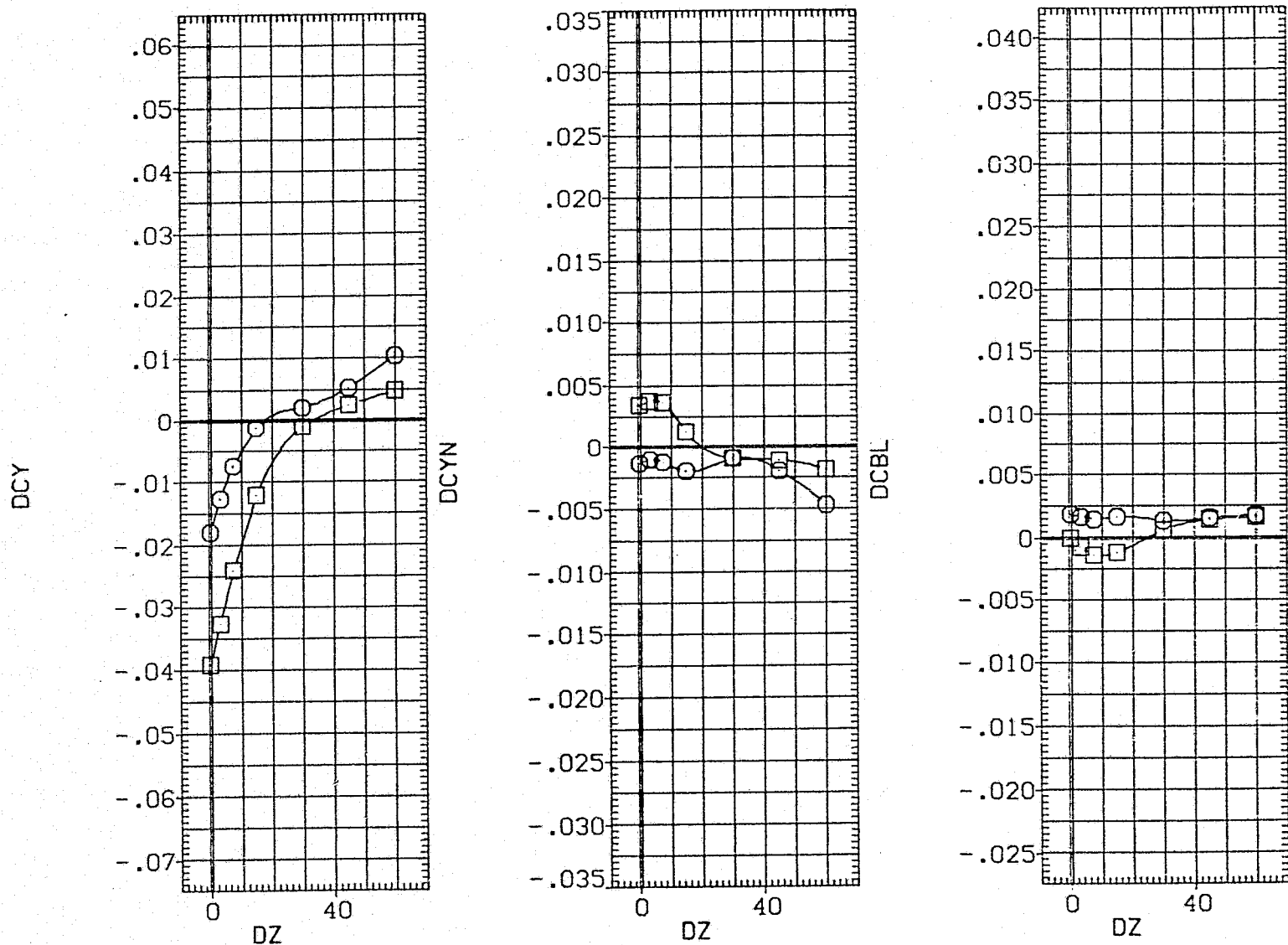


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC 5.000
□	14.000	ELV-IB .000 ELV-OB 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 OX .000
		DY 10.000 BETA0 -5.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

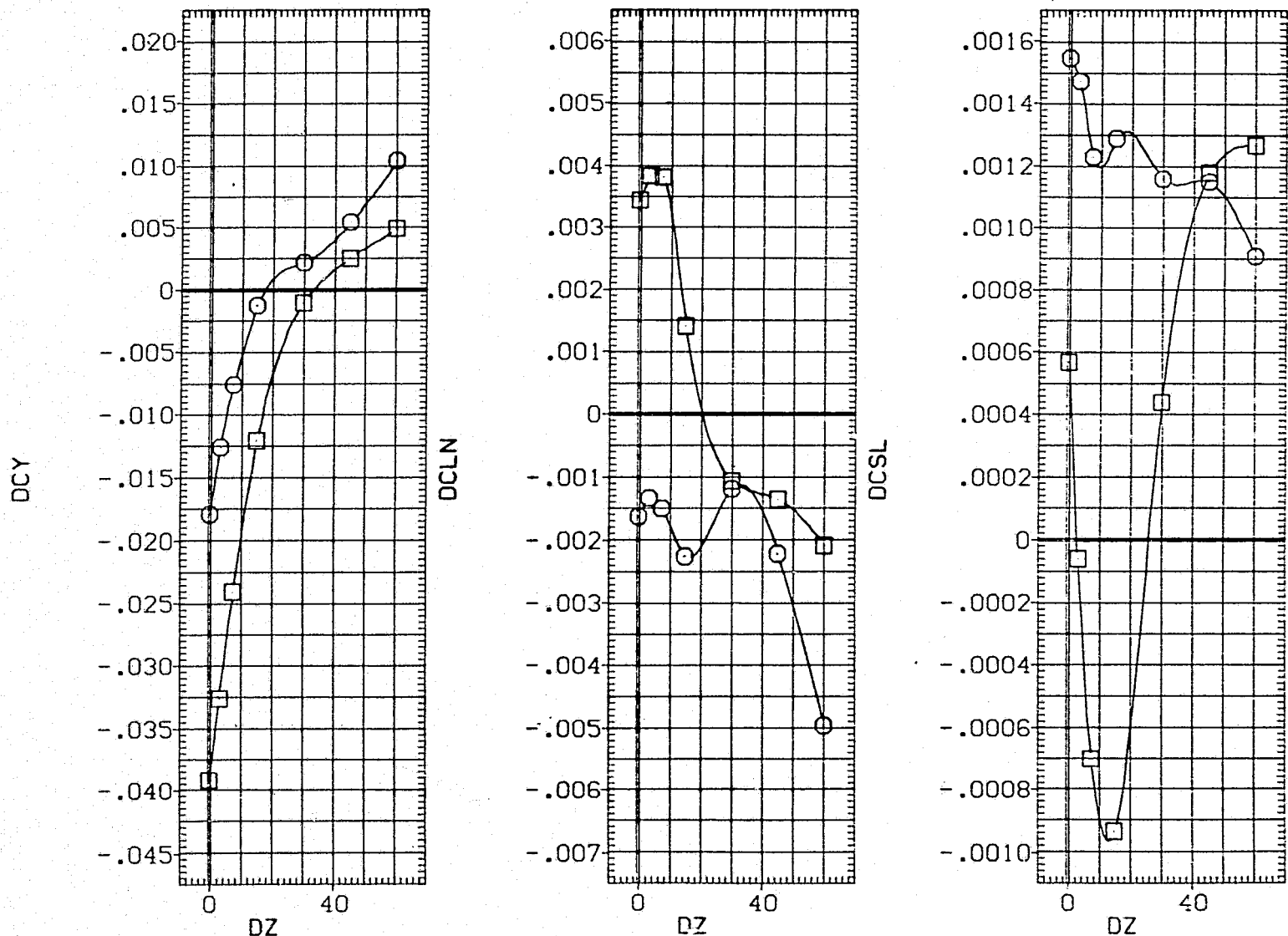


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

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CARRIER DATA (MGND'S)

SYMBOL	ALPHA0	ELV-18	PARAMETRIC VALUES	ELV-08	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	DY	-5.000
		DX	7.500	ALPHAC	.000
			.000		4.000

REFERENCE INFORMATION		
SREF	5500.000	SC.F.T.
LREF	22.7800	IN.
BREF	243.3400	IN.
XMRP	1339.9300	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

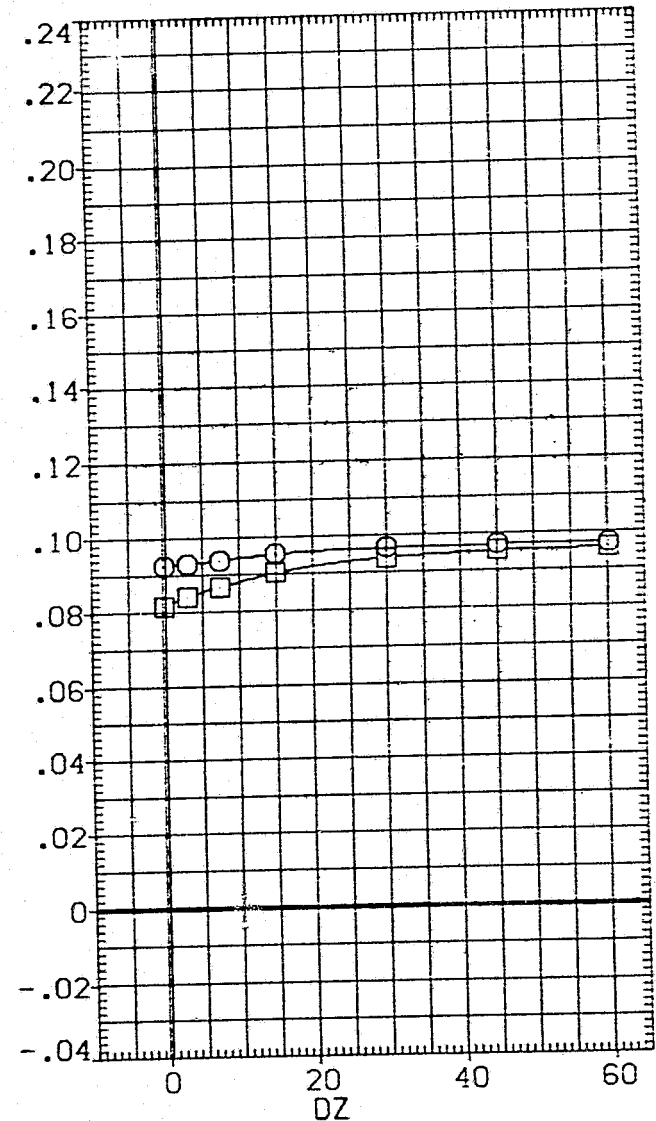
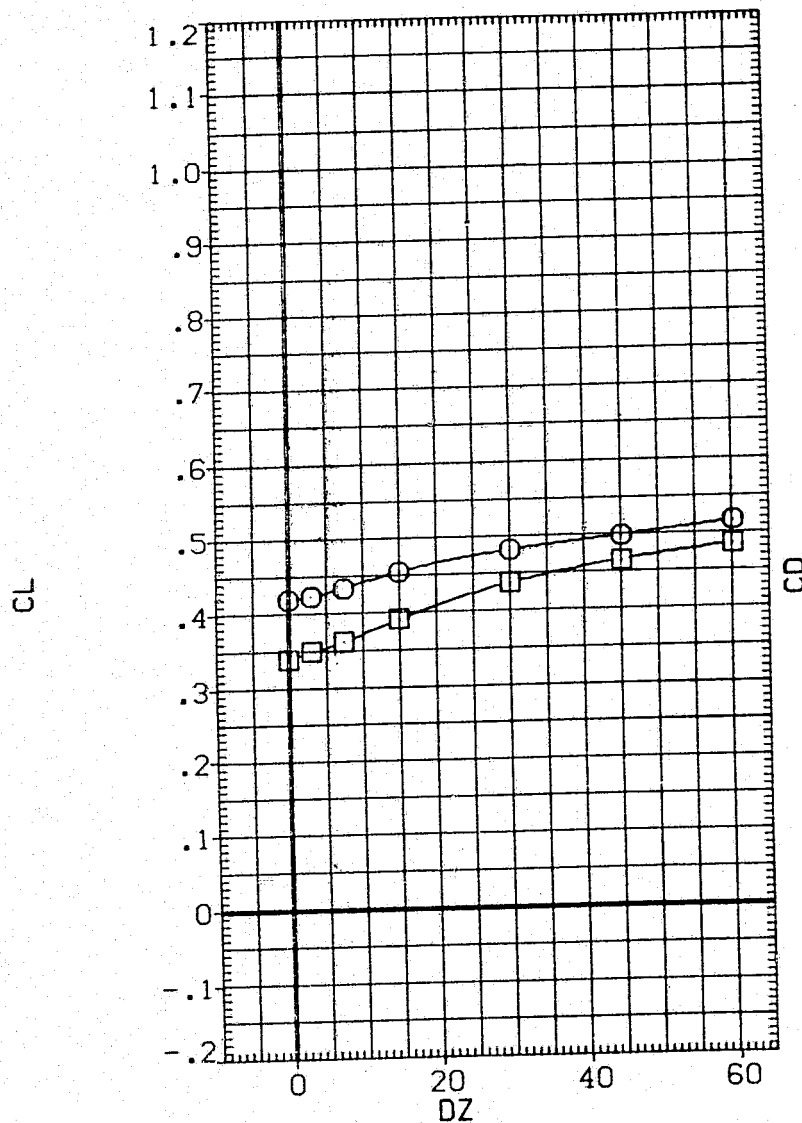


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

ELV-18

14.000

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

.000

ELV-08

MACH

BETAC

DY

ALPHAC

3.000

.600

-5.000

.000

4.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

PITCHING MOMENT COEFFICIENT, CLM

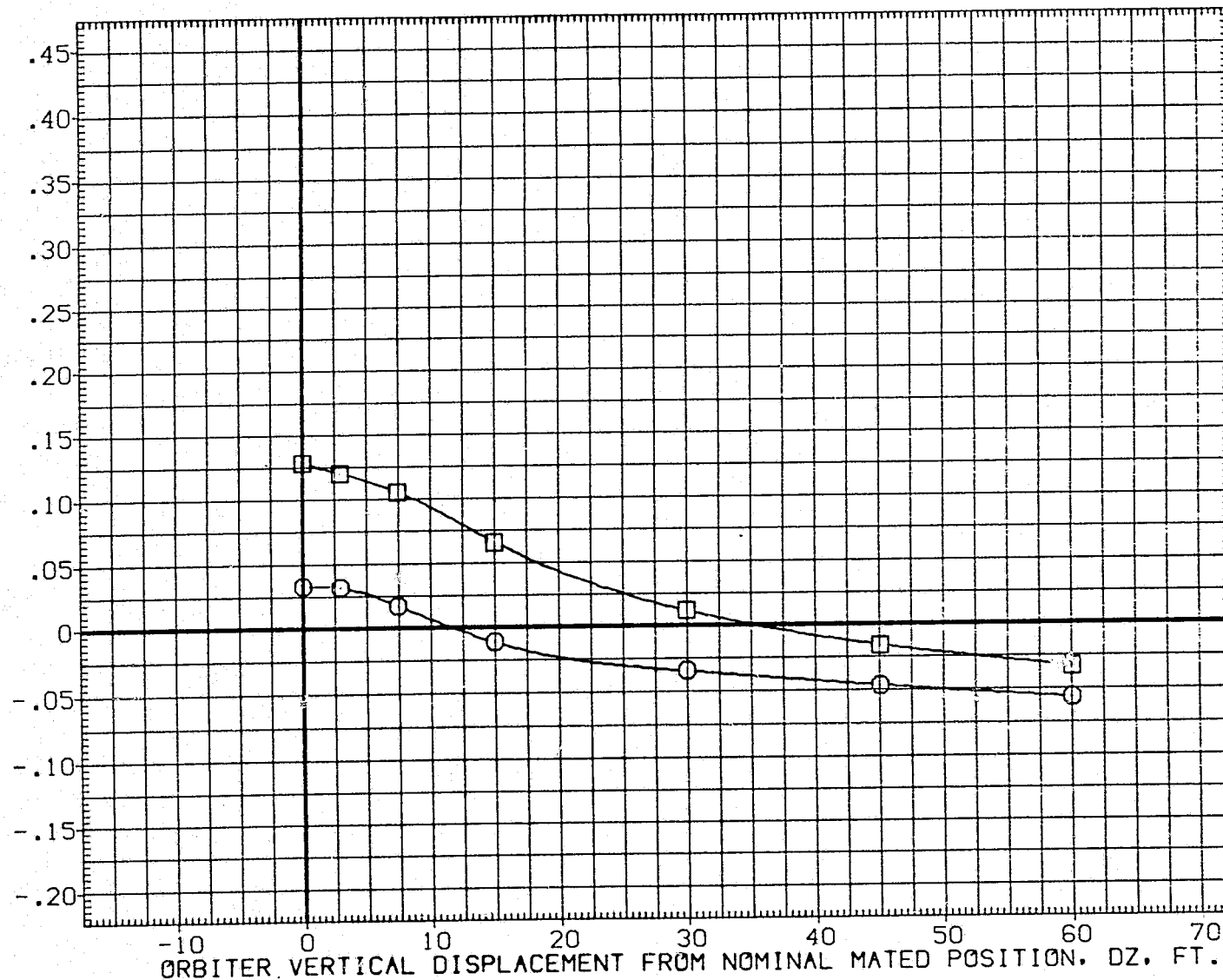


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	.000	MACH	3.000
□	14.000	5.000	BETAC	.600
		.000	DY	-5.000
		7.500	ALPHAC	.000
		.000		4.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.
LREF	327.7800	IN.
BREF	2346.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

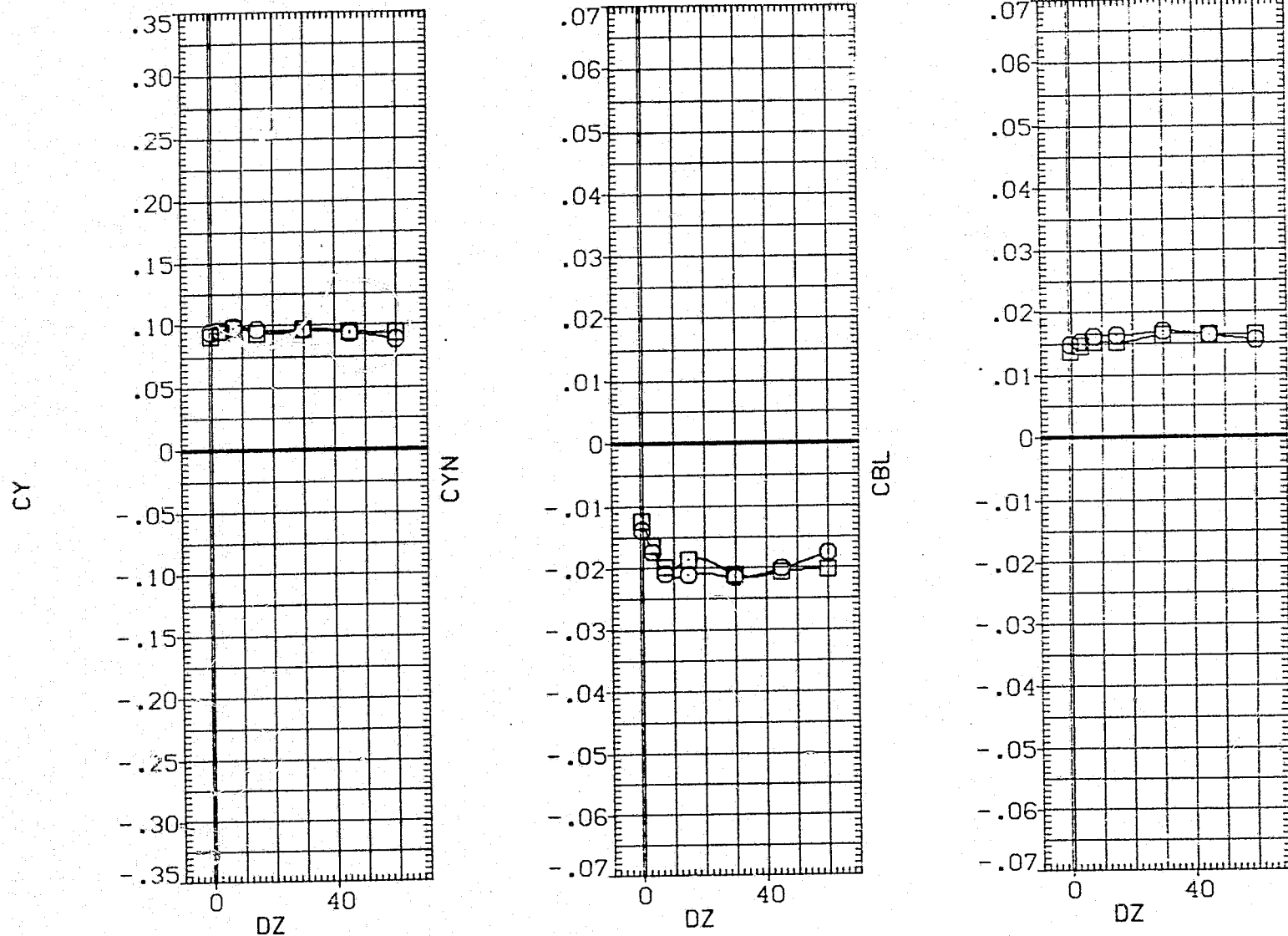


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	DY	-5.000
		DX	7.500	ALPHAC	.000
			.000		4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.XC
YMRF	.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

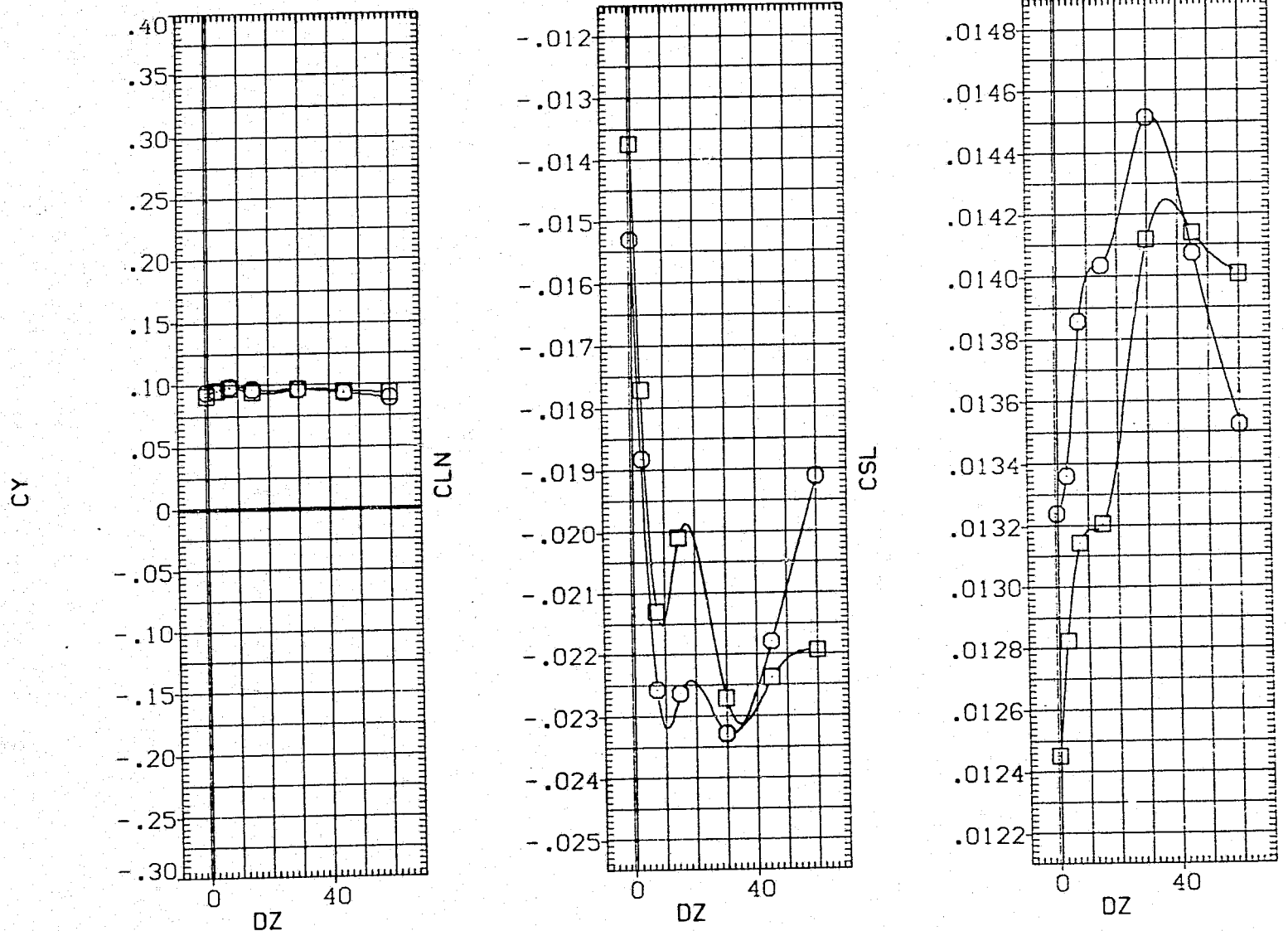


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

7.500

.000

BETAC

ELV-0B

MACH

DX

BETA0

-5.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5300.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.8000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SC.FT.

IN.

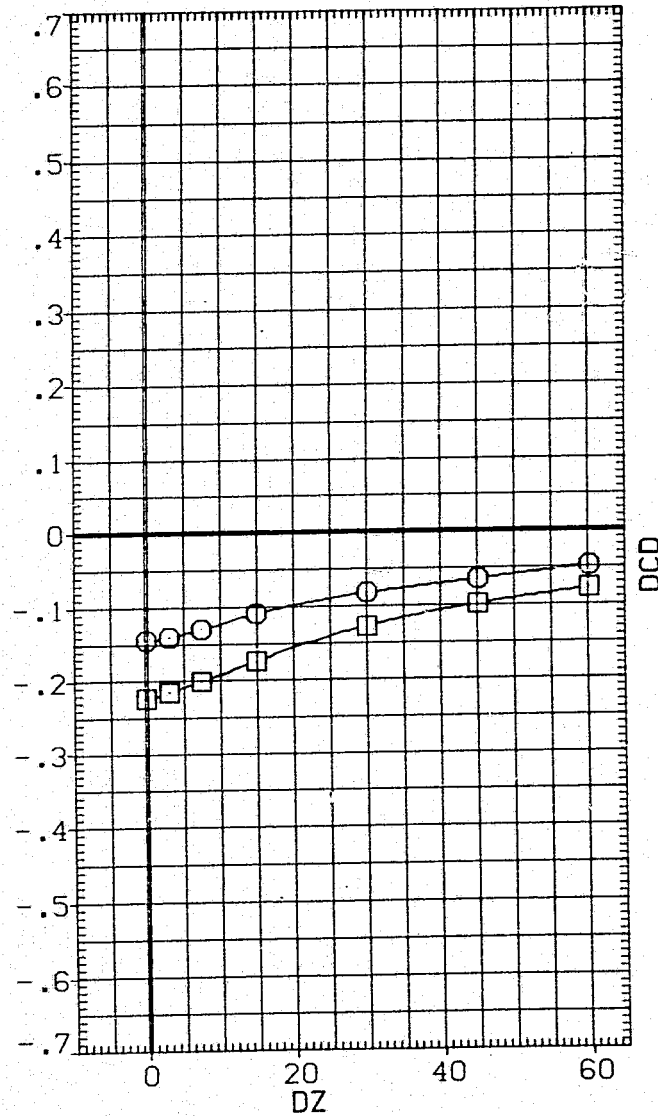
IN.

IN.

IN.

IN.

DCL



DCD

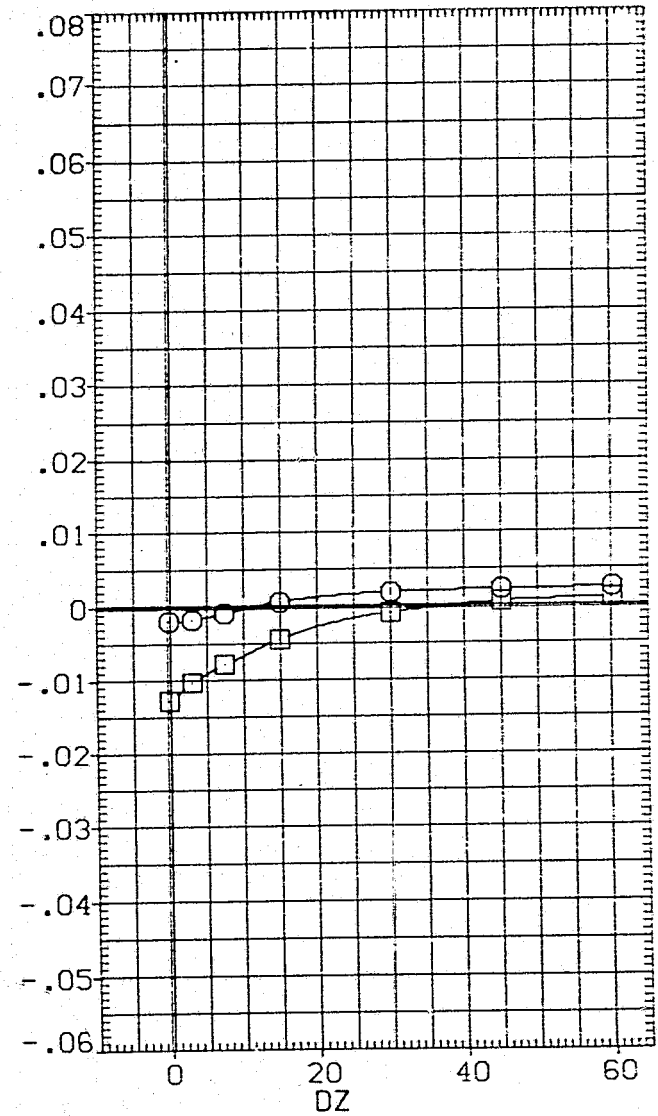


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

BETAC

-5.000

.000

ELV-QB

3.000

5.000

MACH

.600

7.500

DX

.000

.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000

50.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

IN.YC

ZMRP 190.8000

IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

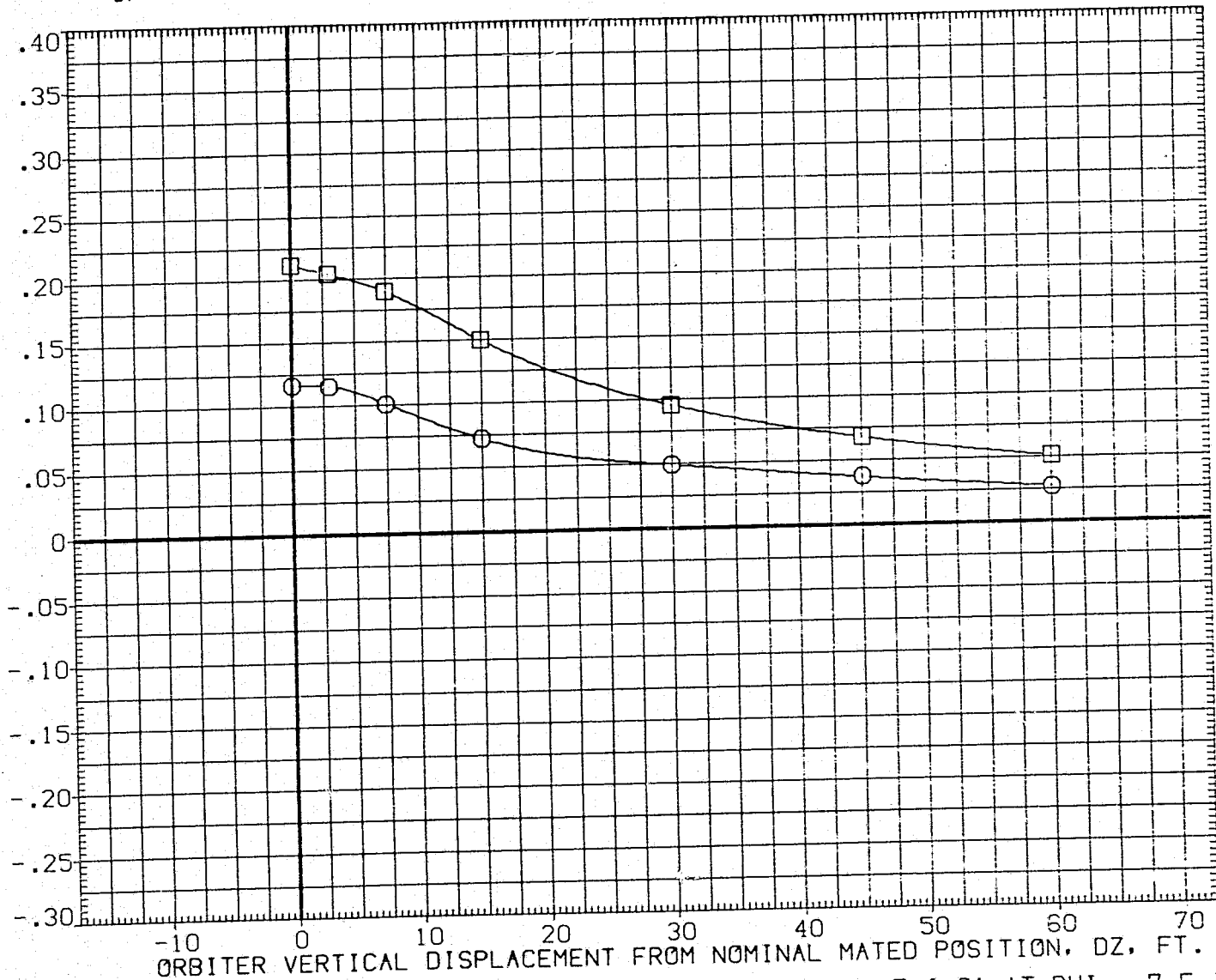


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	ELV-IB	4.000	-5.000
□	14.000	ELEVON	.000	3.000
		PHI	5.000	.600
		DY	7.500	.000
			BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.8000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

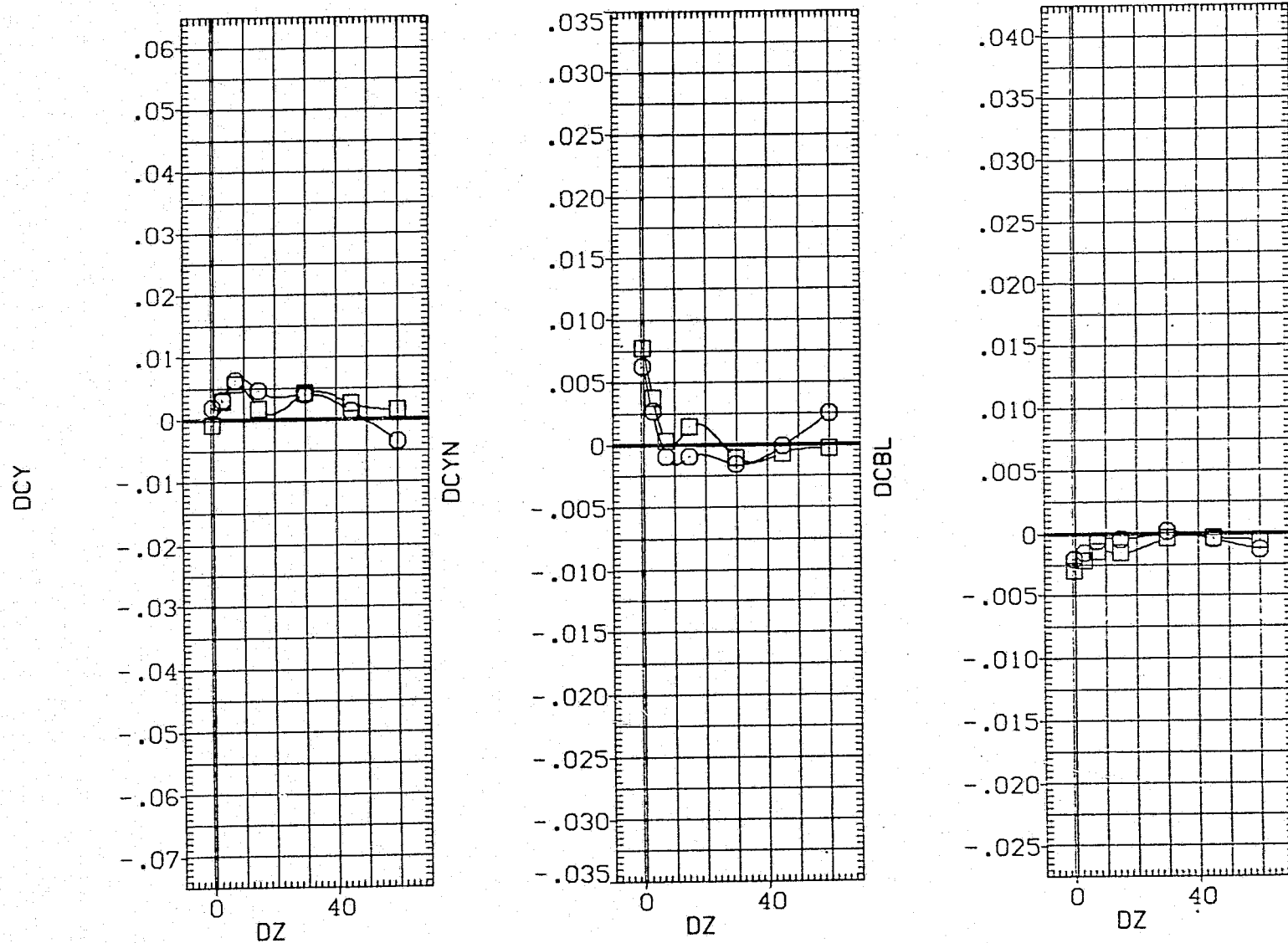


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES			
	10.000	ALPHAC	4.000	BETAC	-5.000	
○	14.000	ELV-1B	.000	ELV-0B	3.000	
□		ELEVON	5.000	MACH	.600	
		PHI	7.500	DX	.000	
		DY	.000	BETA0	.000	

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

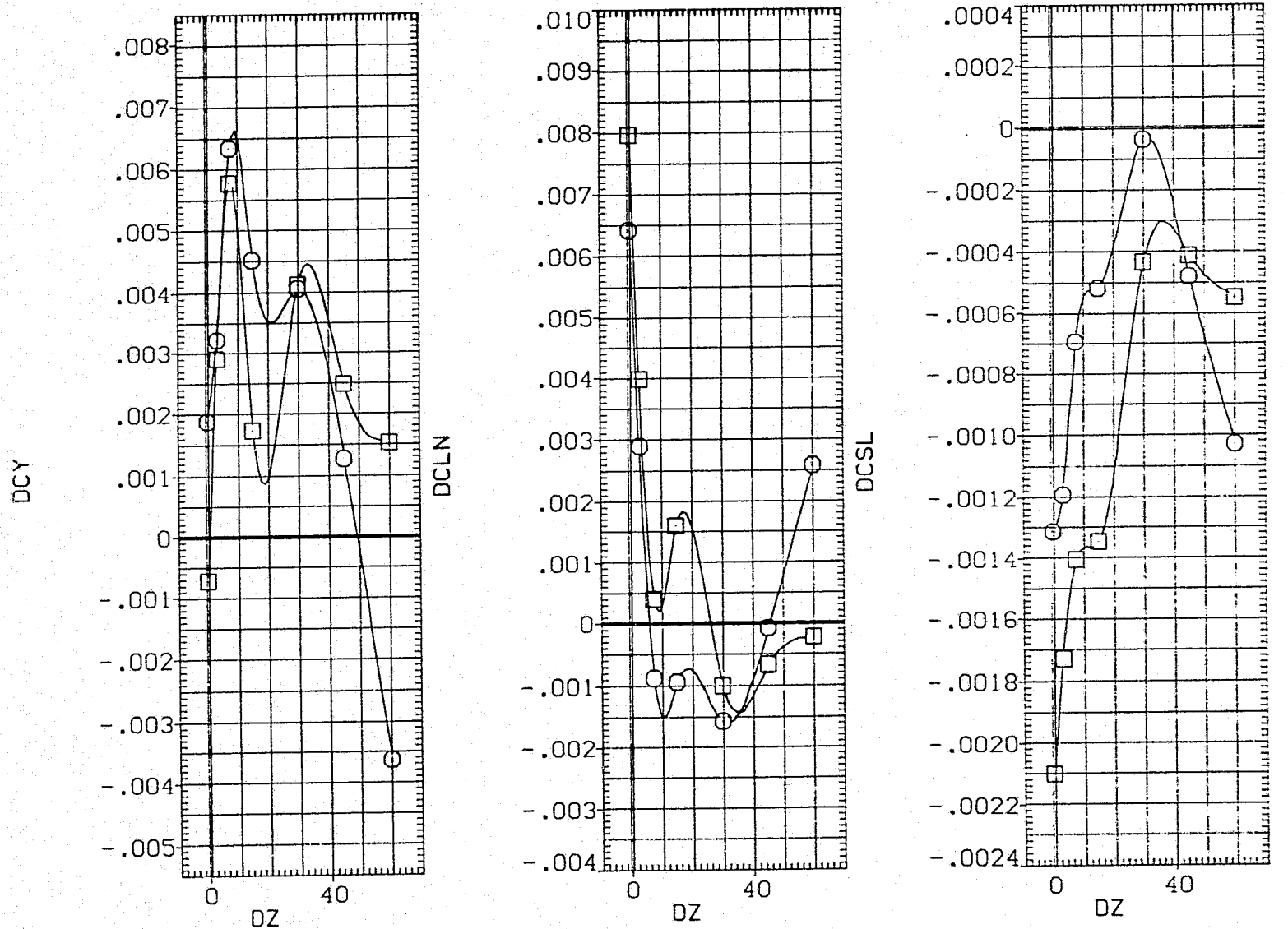


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC -5.000
		PHI 7.500 DY .000
		DX .000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.00
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.
YMRP	.0000	IN.
ZMRP	190.8000	IN.
SCALE	.0300	

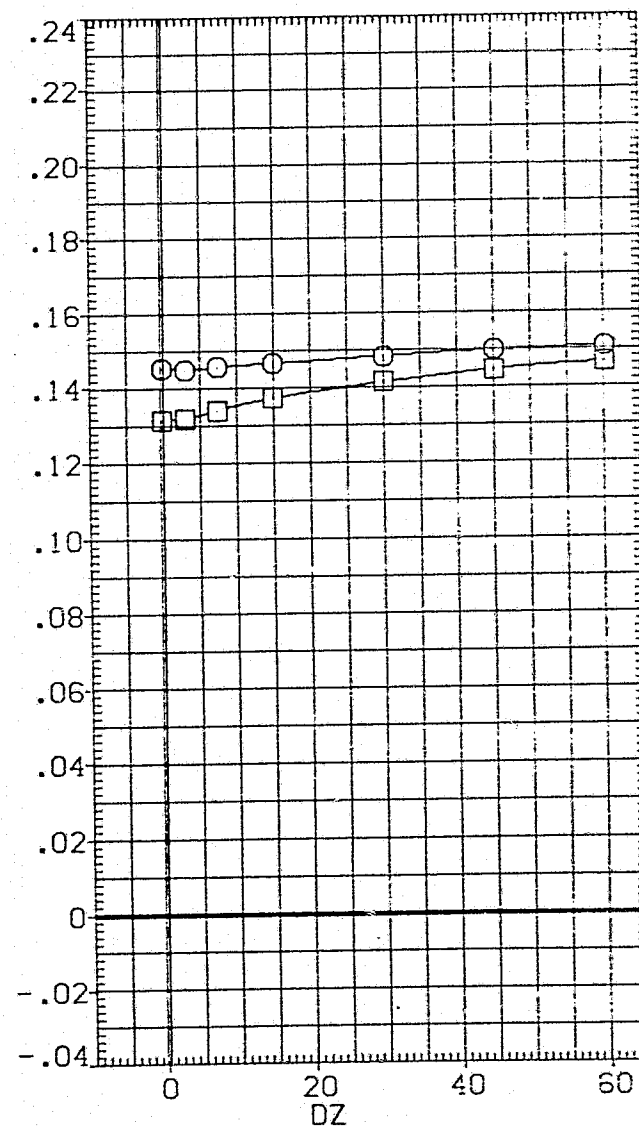
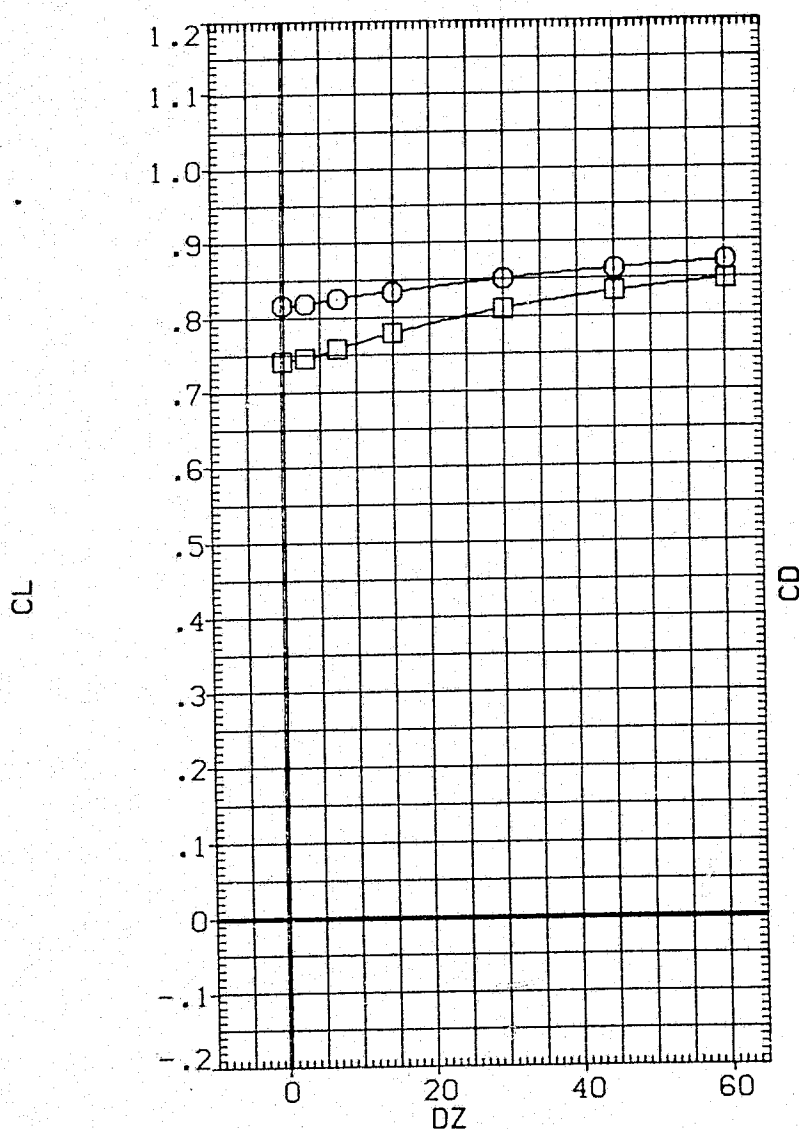


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEV0N	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	7.500	DY	.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

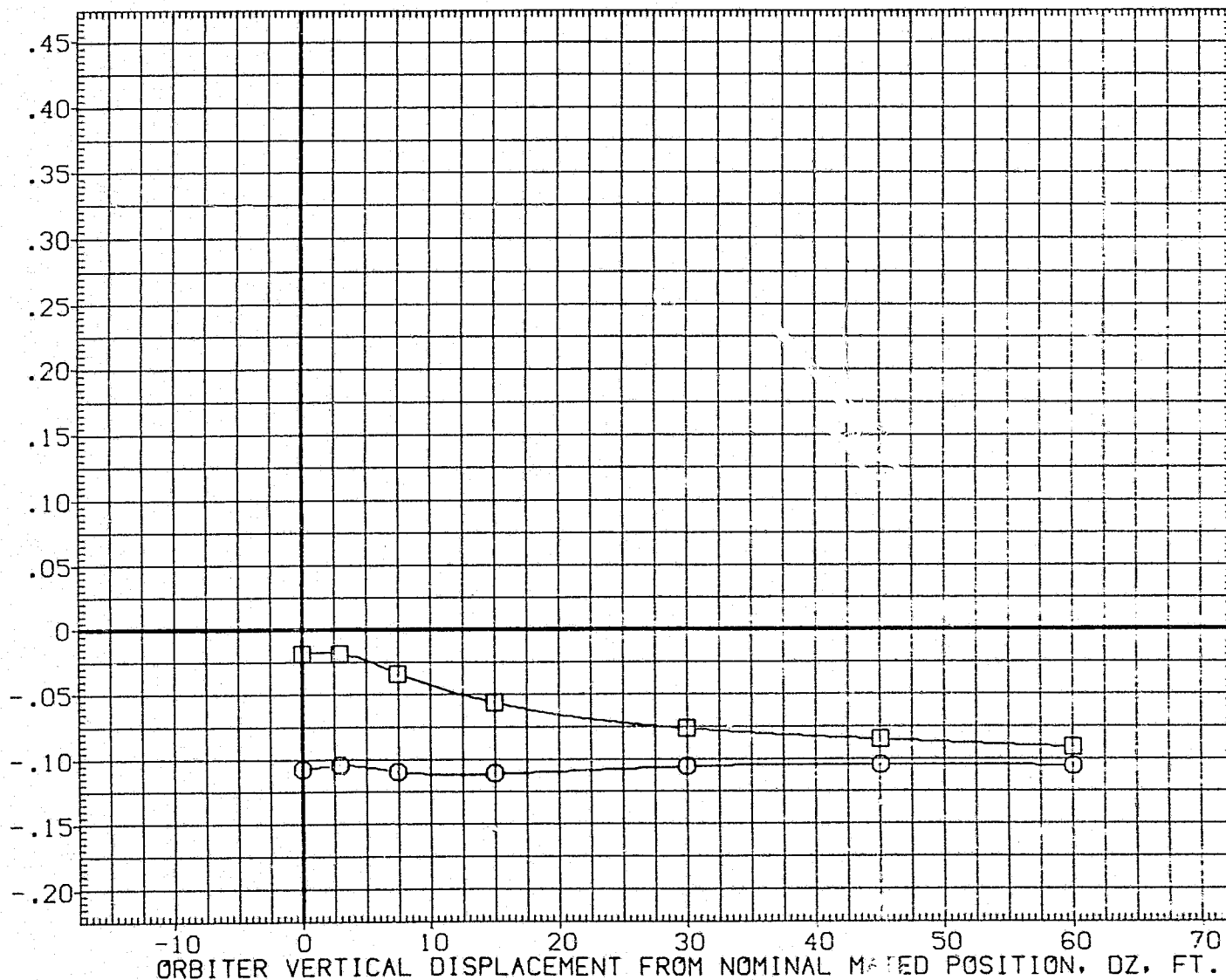


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	.000	MACH	3.000
□	14.000	5.000	BETAC	.600
		.000	DY	-5.000
		7.500	ALPHAC	.000
		.000		8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	190.8000	IN.ZC
SCALE	.0300	

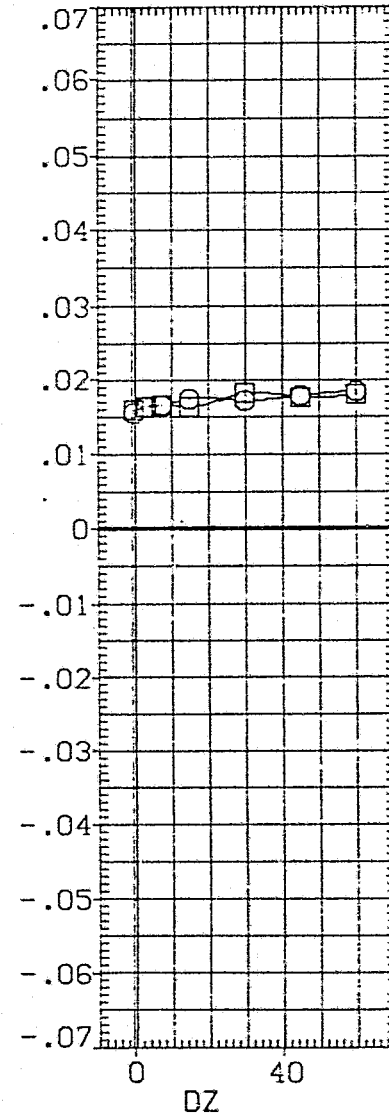
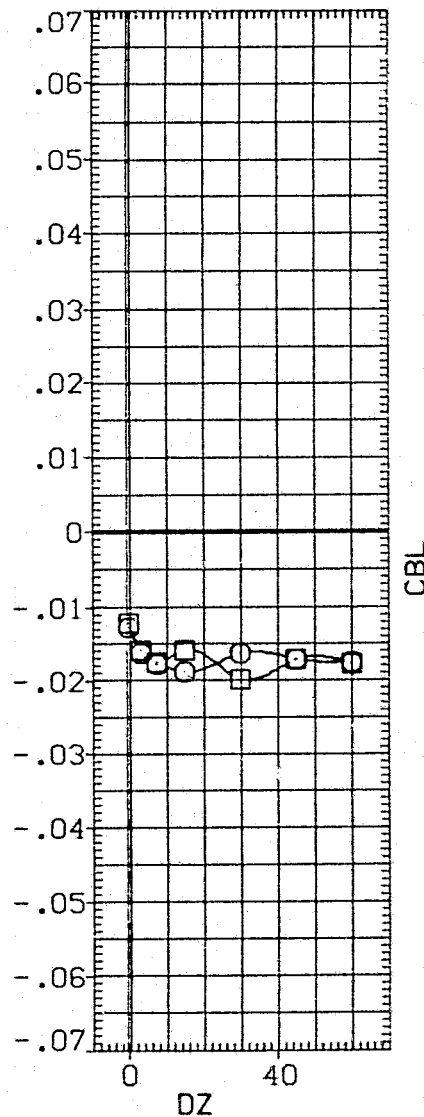
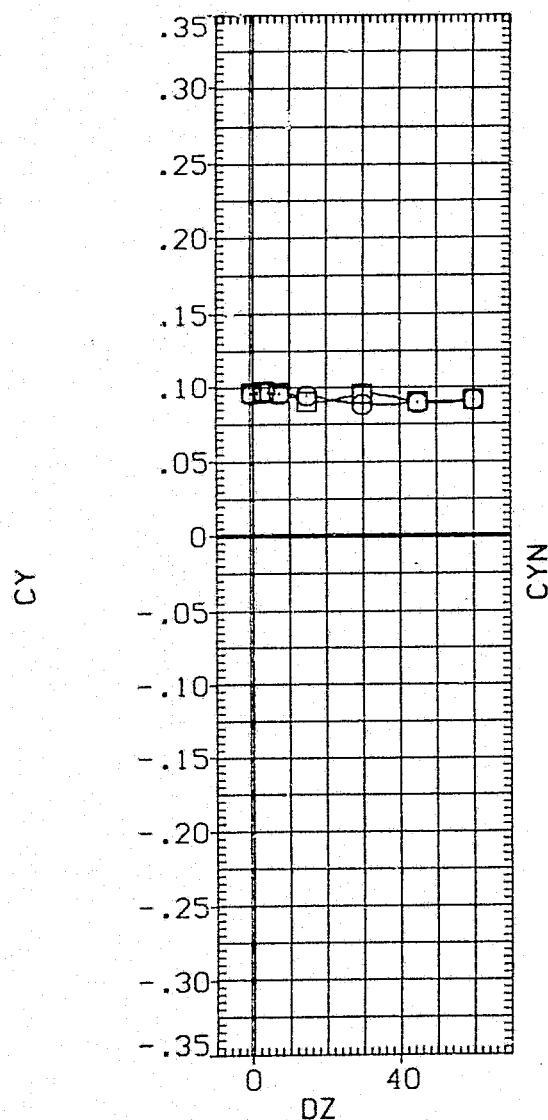


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-IB

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

.000

ELV-OB

MACH

BETAC

DY

ALPHAC

3.000

.600

-5.000

.000

8.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

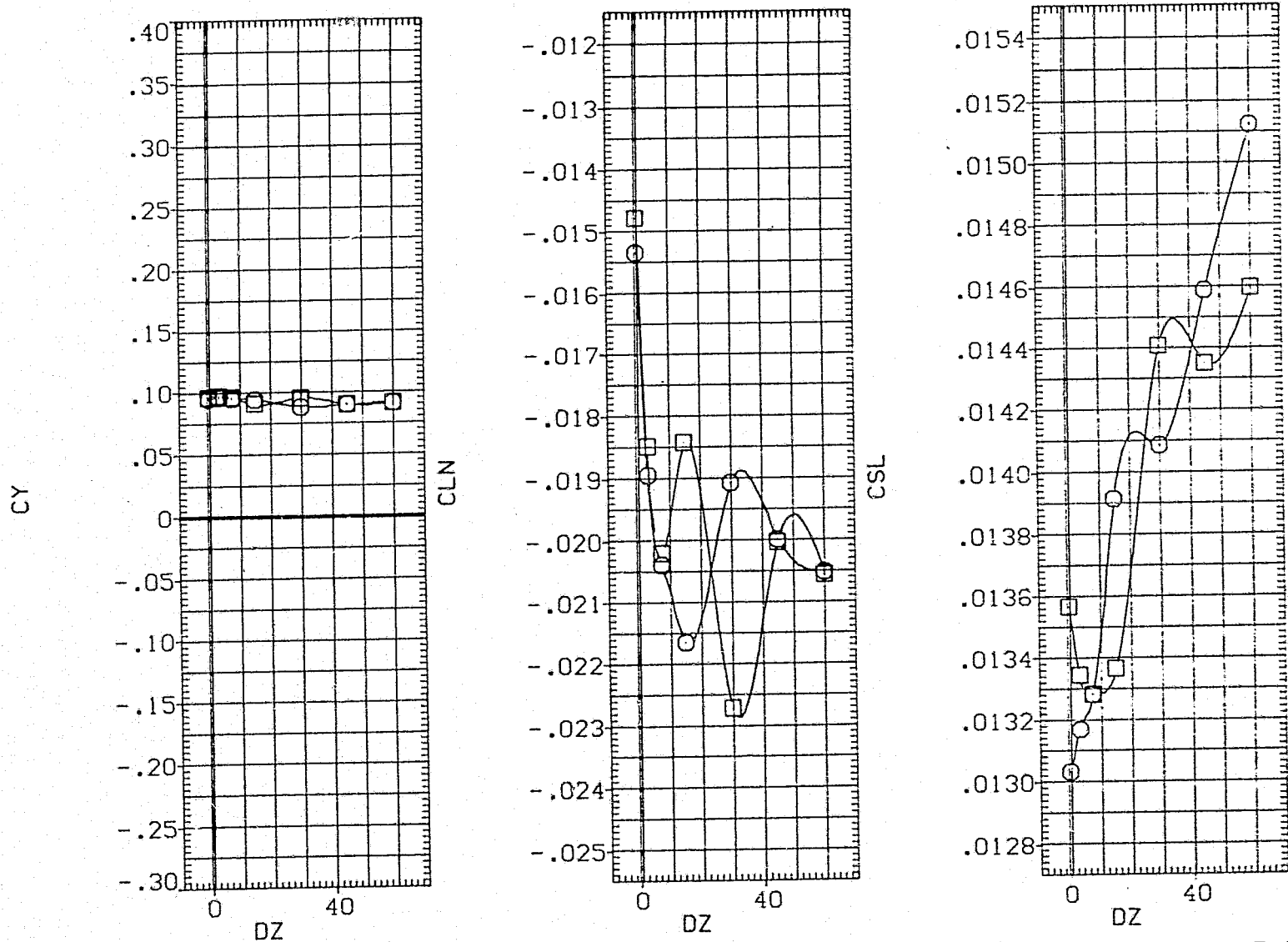


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

7.500

.000

BETAC

ELV-0B

MACH

DX

BETAC

-5.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.6000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

DCL

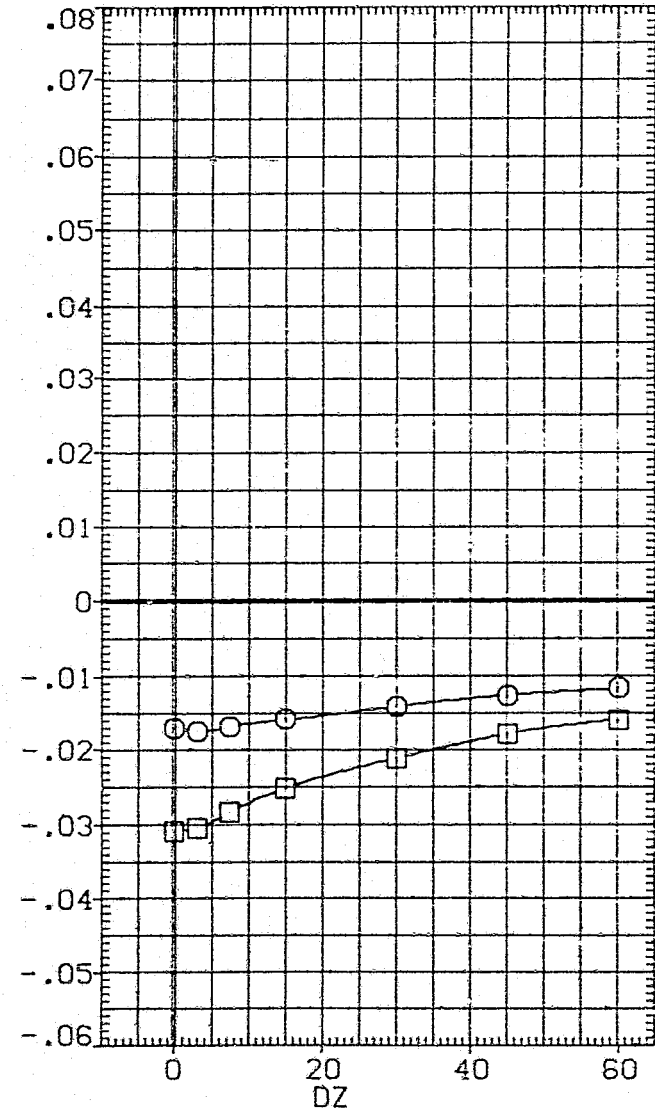
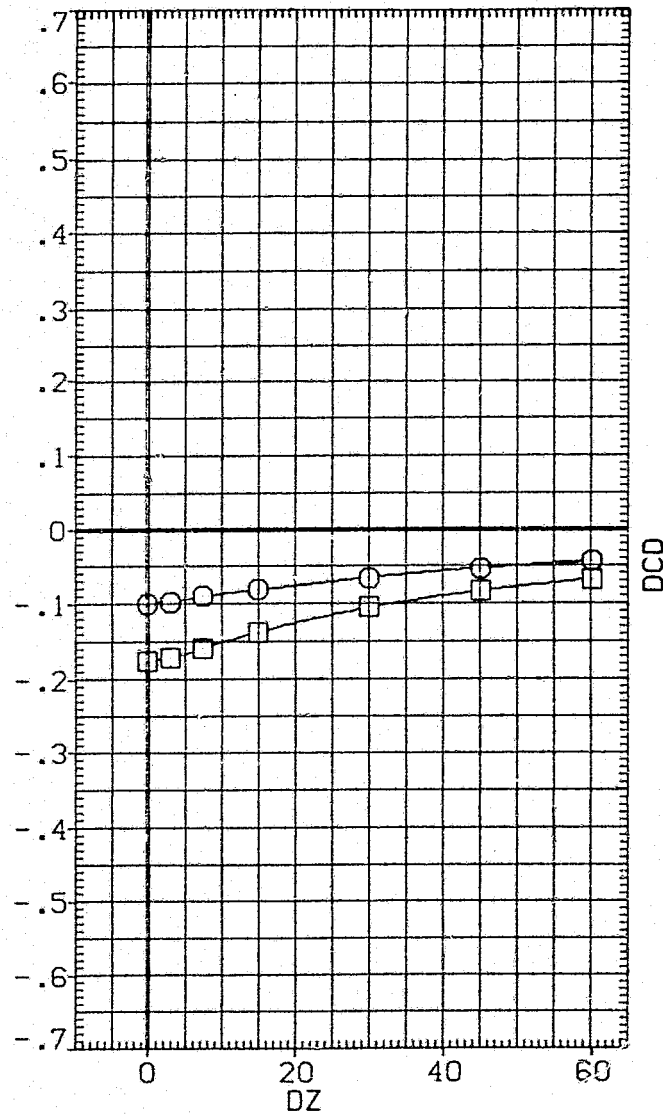


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

7.500

.000

BETAC

ELV-0B

MACH

DX

BETA0

-5.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000 50.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

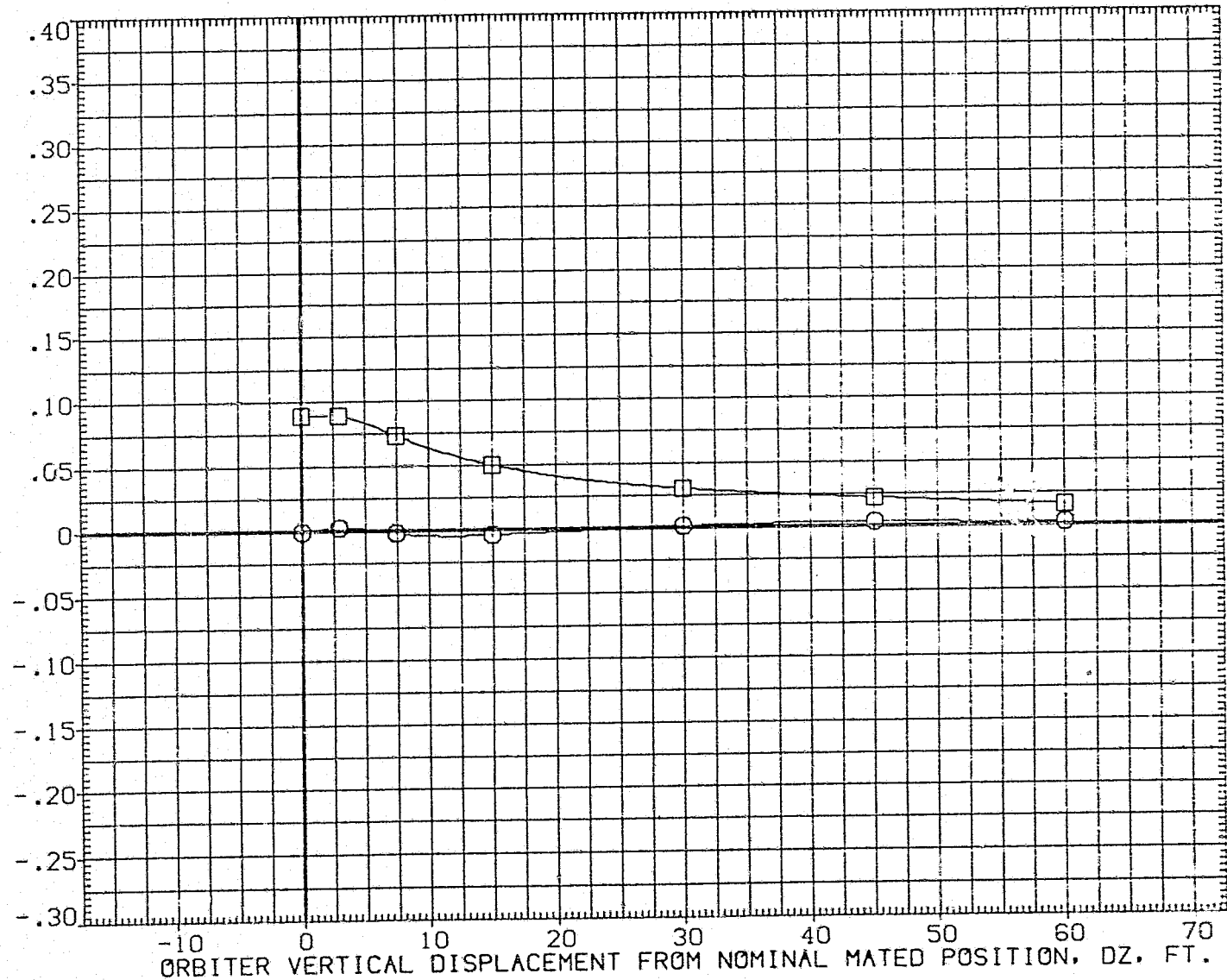


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL ○ □	ALPHA0	PARAMETRIC VALUES			
	10.000	ALPHAC	8.000	BETAC	-5.000
	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	HACH	.600
		PHI	7.500	DX	.000
		DY	.000	BETAD	.000

REFERENCE INFORMATION		
SREF	5000.0000	10.00
LREF	50.0000	IN.
BREF	2040.0400	IN.
XMRP	100.0000	IN.XC
YMRP	.0000	IN.YC
ZMRP	100.0000	IN.ZC
SCALE	.0300	

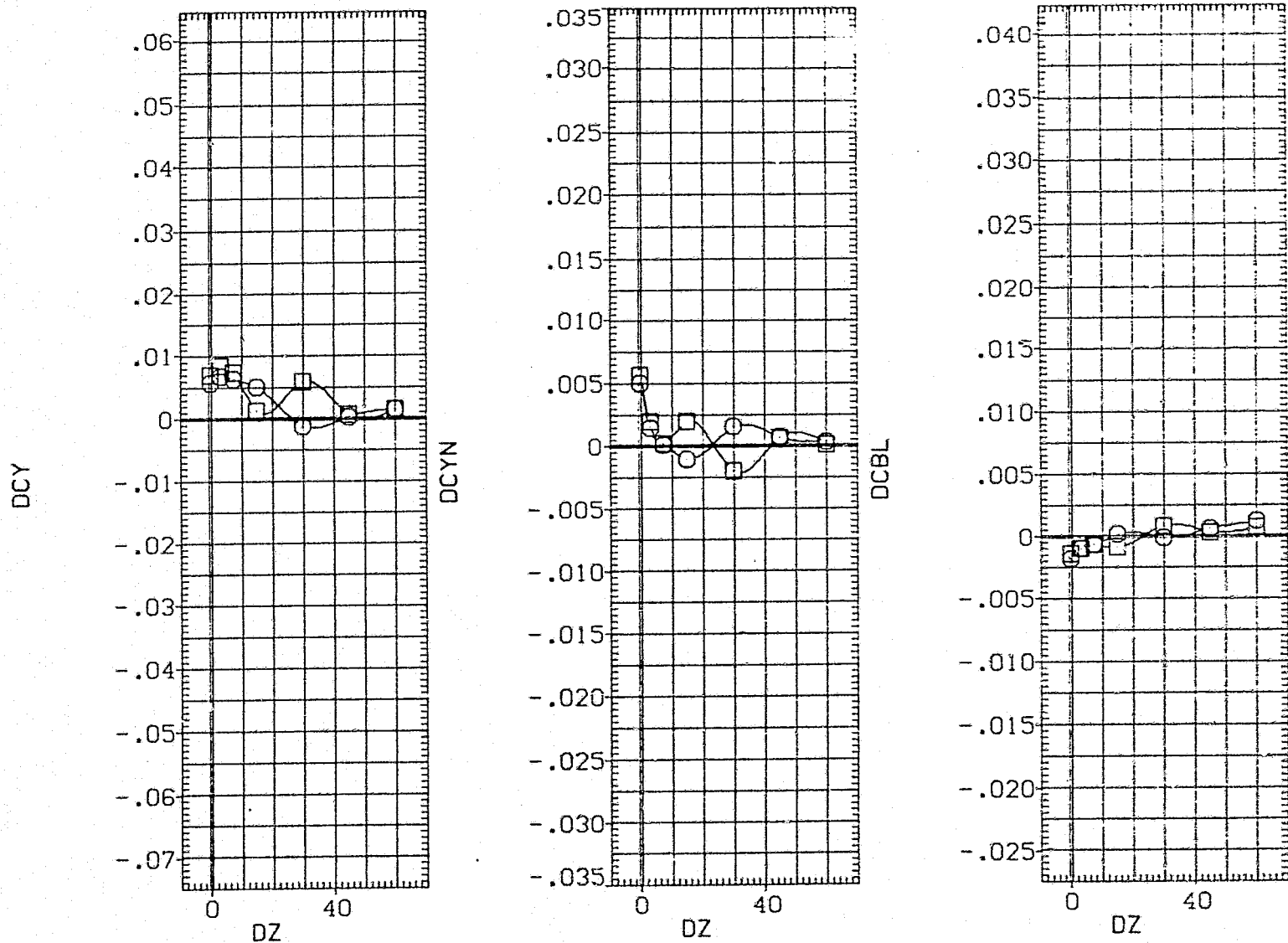


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 (747/1 01 S1) - (747/1)

D/S (078 - 034)(UGN078)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC 8.000	BETAC -5.000
□	14.000	ELV-1B .000	ELV-0B 3.000
		ELEVON 5.000	MACH .600
		PHI 7.500	DX .000
		DY .000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

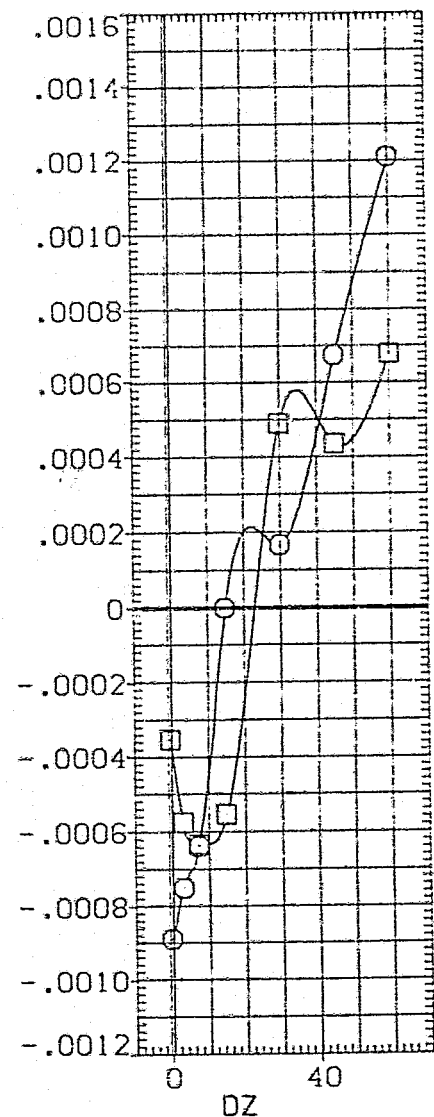
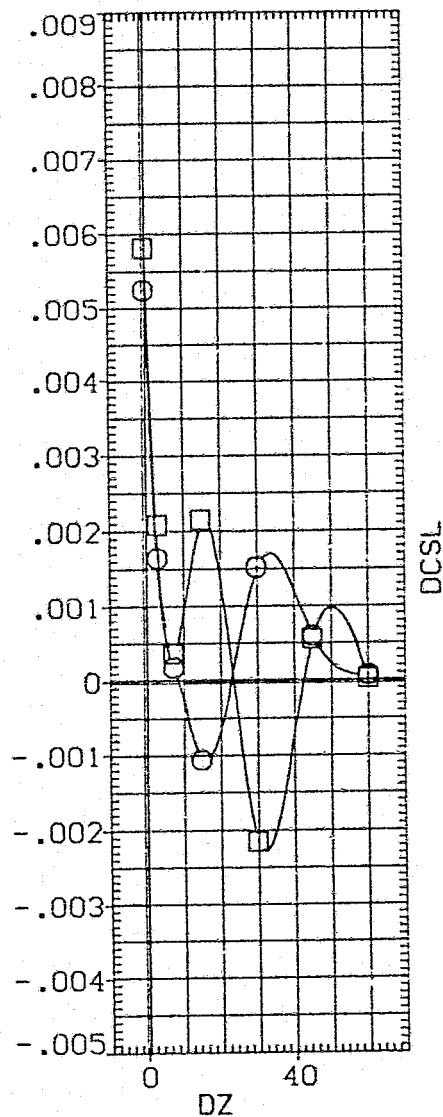
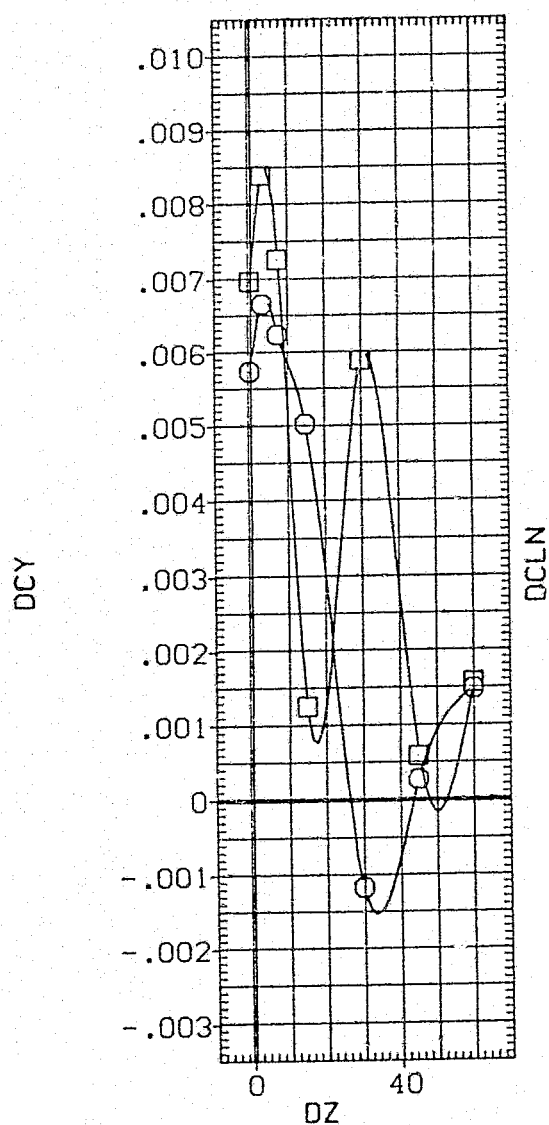


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL \circ \square

ALPHAD		PARAMETRIC VALUES			
10.000	ELV-18	.000	ELV-08	3.000	
14.000	ELEVON	5.000	MACH	.600	
	BETAC	.000	BETAC	-5.000	
	PHI	7.500	DY	.000	
	DX	10.000	ALPHAC	4.000	

REFERENCE INFORMATION

SREF	5500.000	50.FT.
LREF	327.7800	IN.
BREF	2347.400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

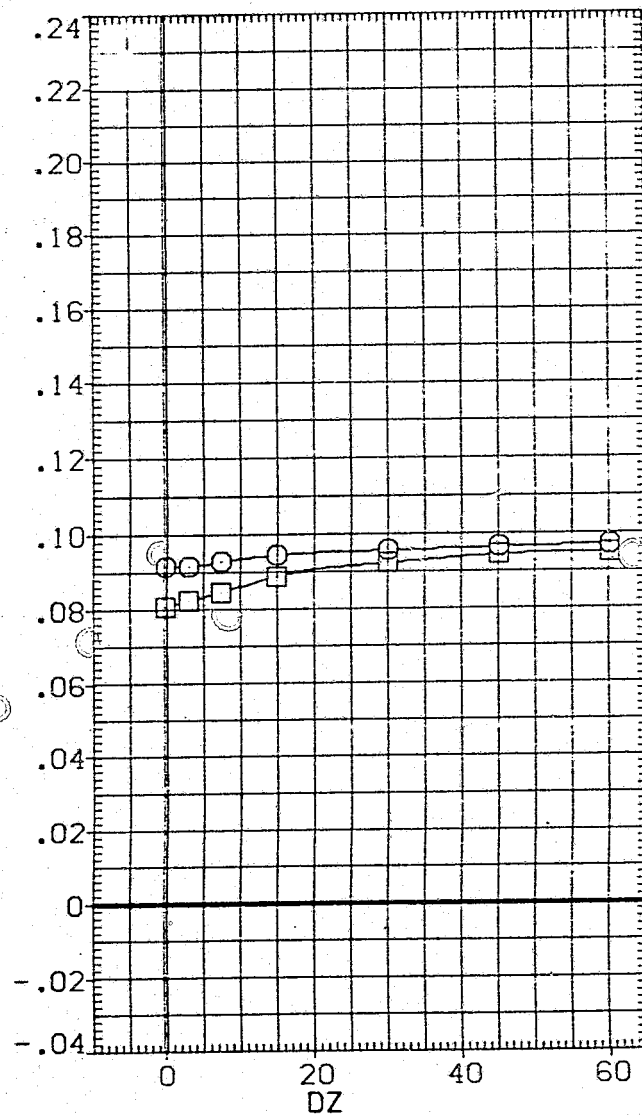
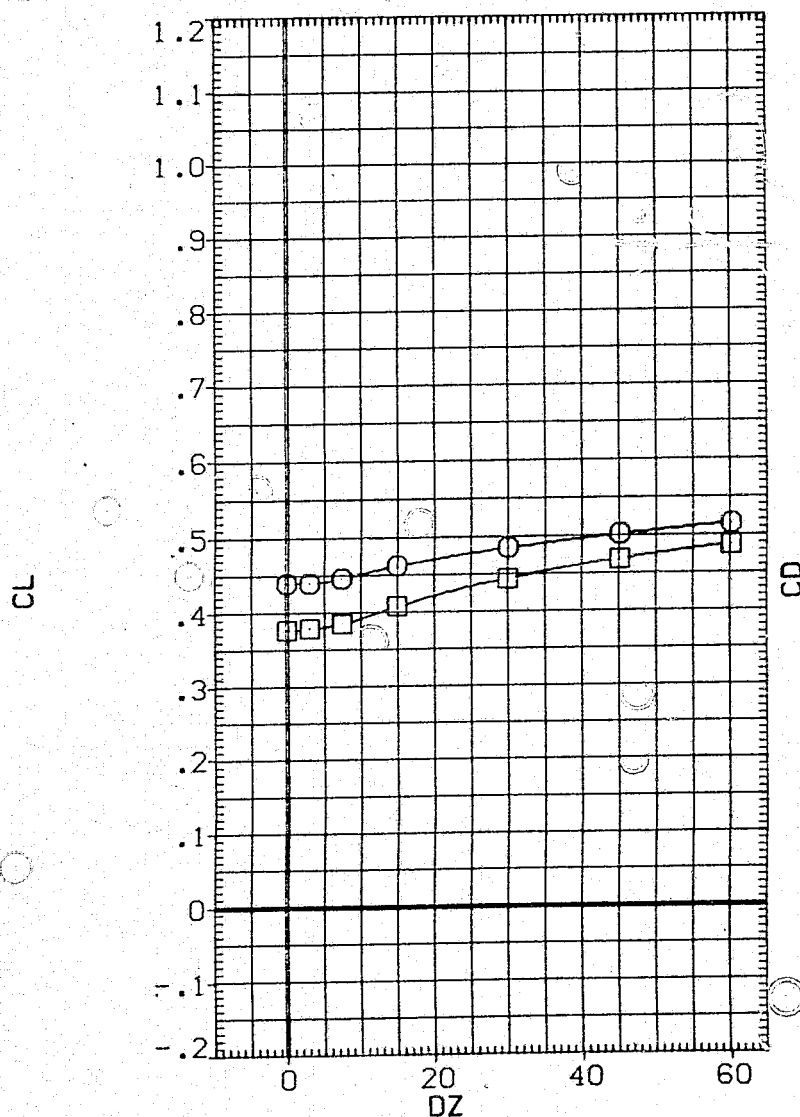


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	7.500	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.6000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

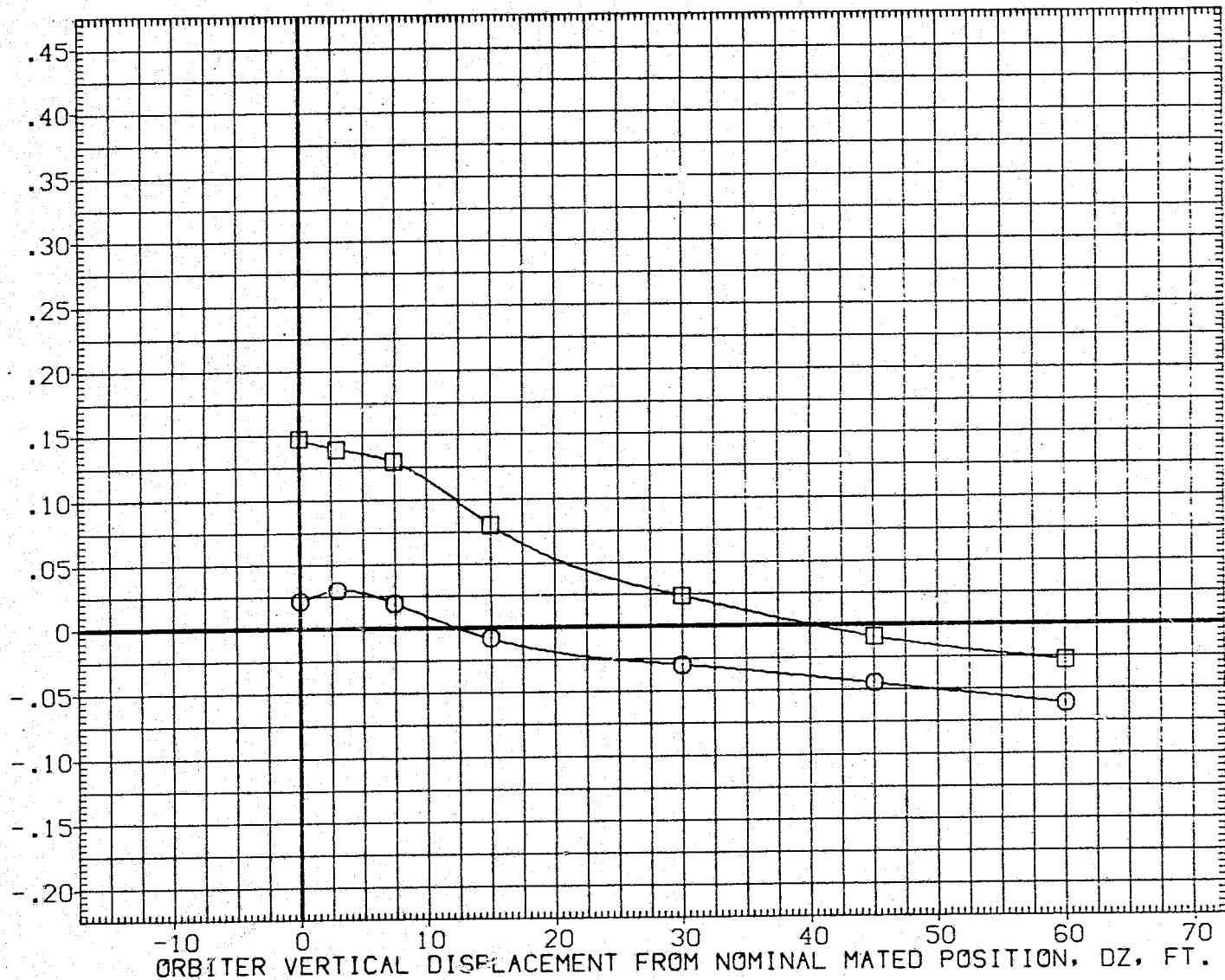


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CARRIER DATA (MGNO77)

DX

ALPHAC

4.000

SREF	3500.0000	SO.FT.
LREF	300.7800	IN.
BREF	200.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	100.0000	IN.YC
ZMRP	100.0000	IN.ZC
SCALE	.0300	

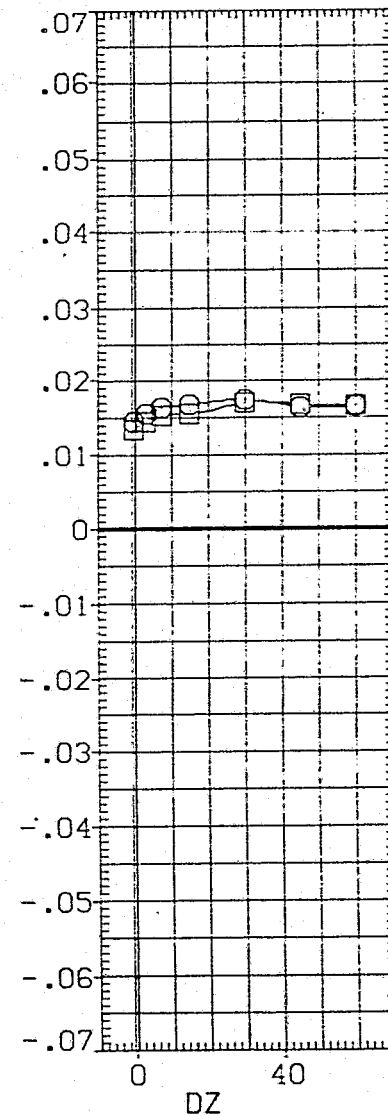
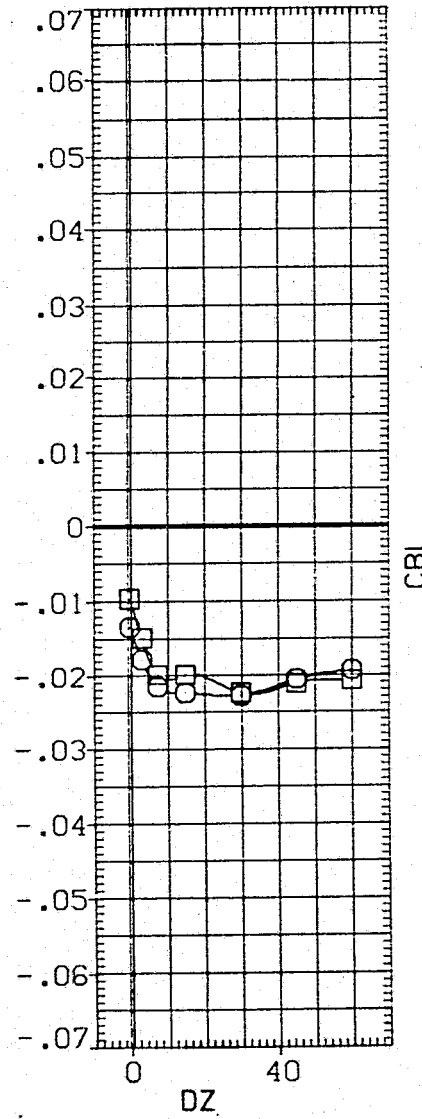


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	ELEVON	.000	3.000
□	14.000	BETA0	5.000	.600
		PHI	.000	-5.000
		DX	7.500	.000
			ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

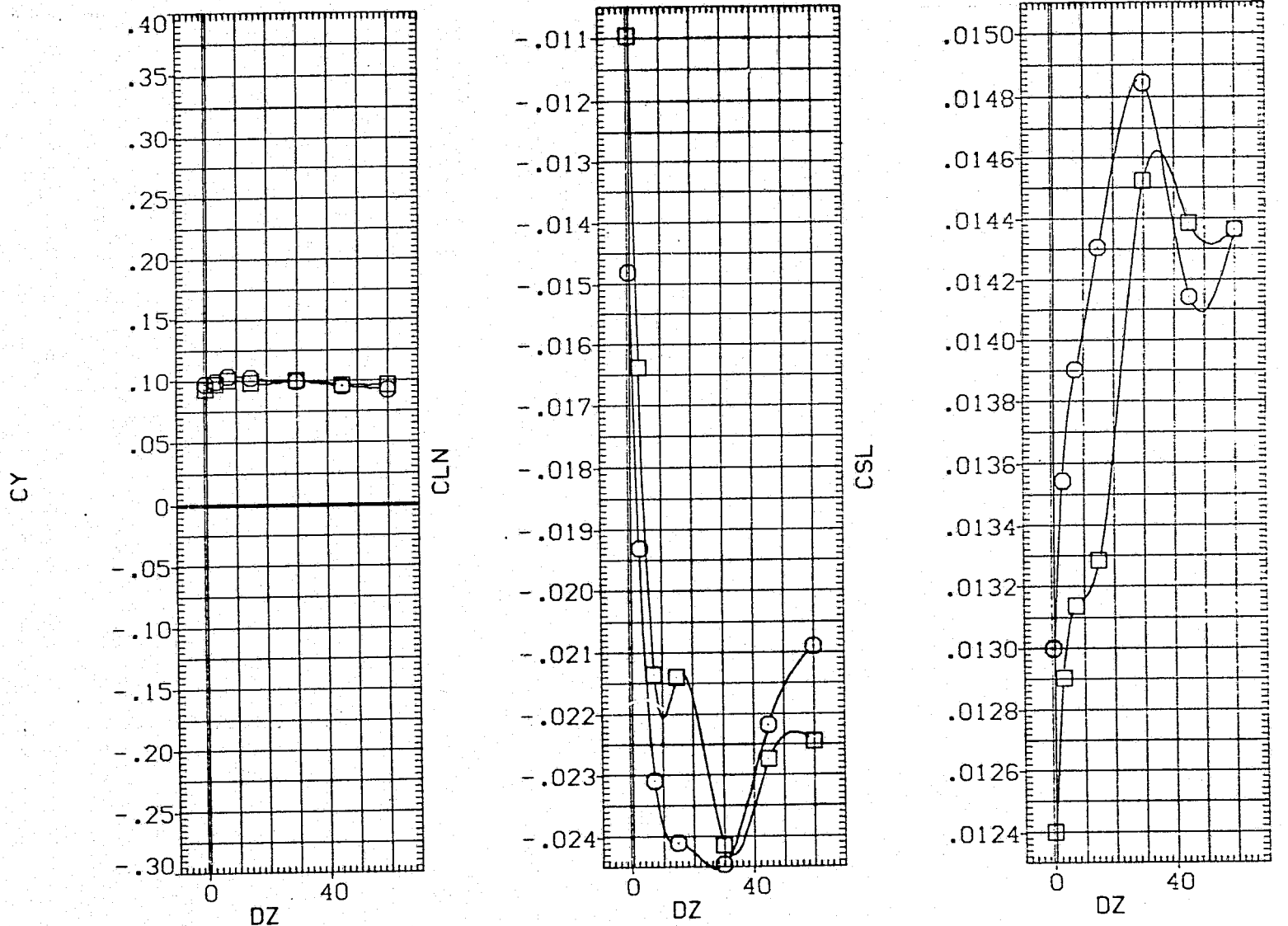


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

7.500

.000

BETAC

ELV-OB

MACH

DX

BETA0

-5.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF 5500.000 SQ.FT.

LREF 2348.0400 IN.

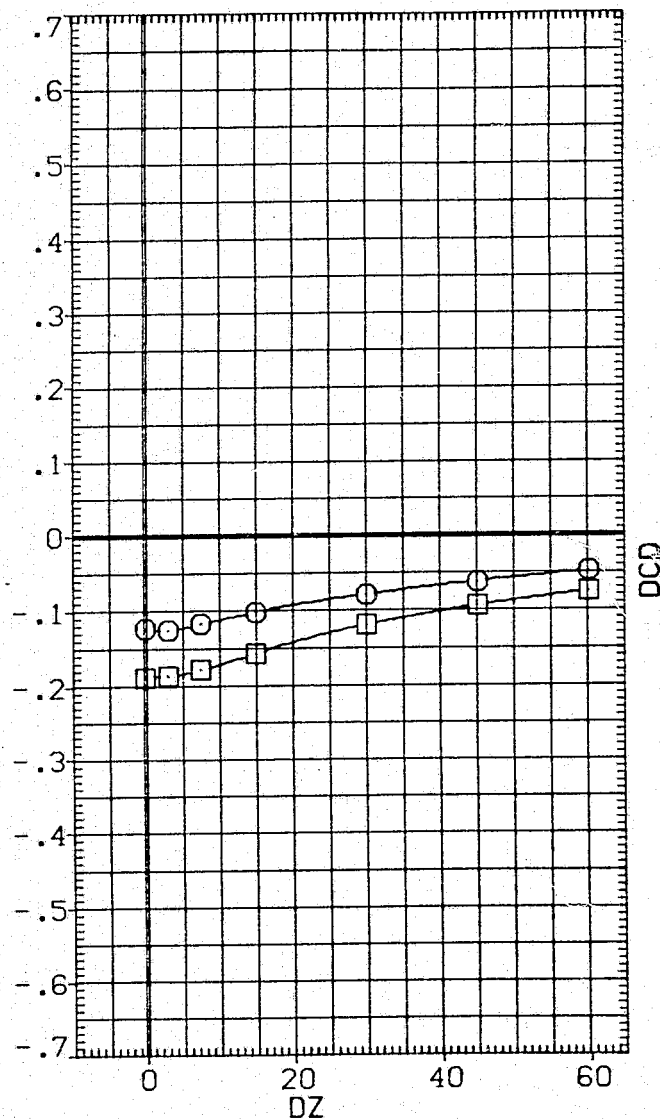
BREF 1339.8000 IN.XC

XMRP .0310 IN.YC

YMRP 190.8000 IN.ZC

ZMRP .0300

DCL



DCD

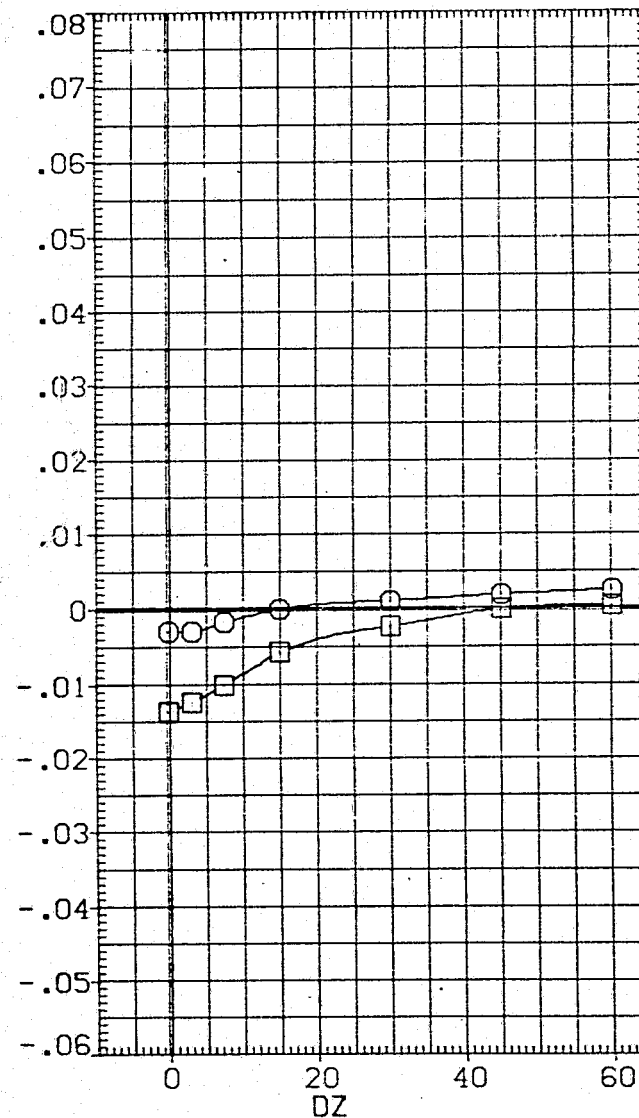


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

7.500

.000

BETAC

ELV-0B

MACH

DX

BETA0

-5.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

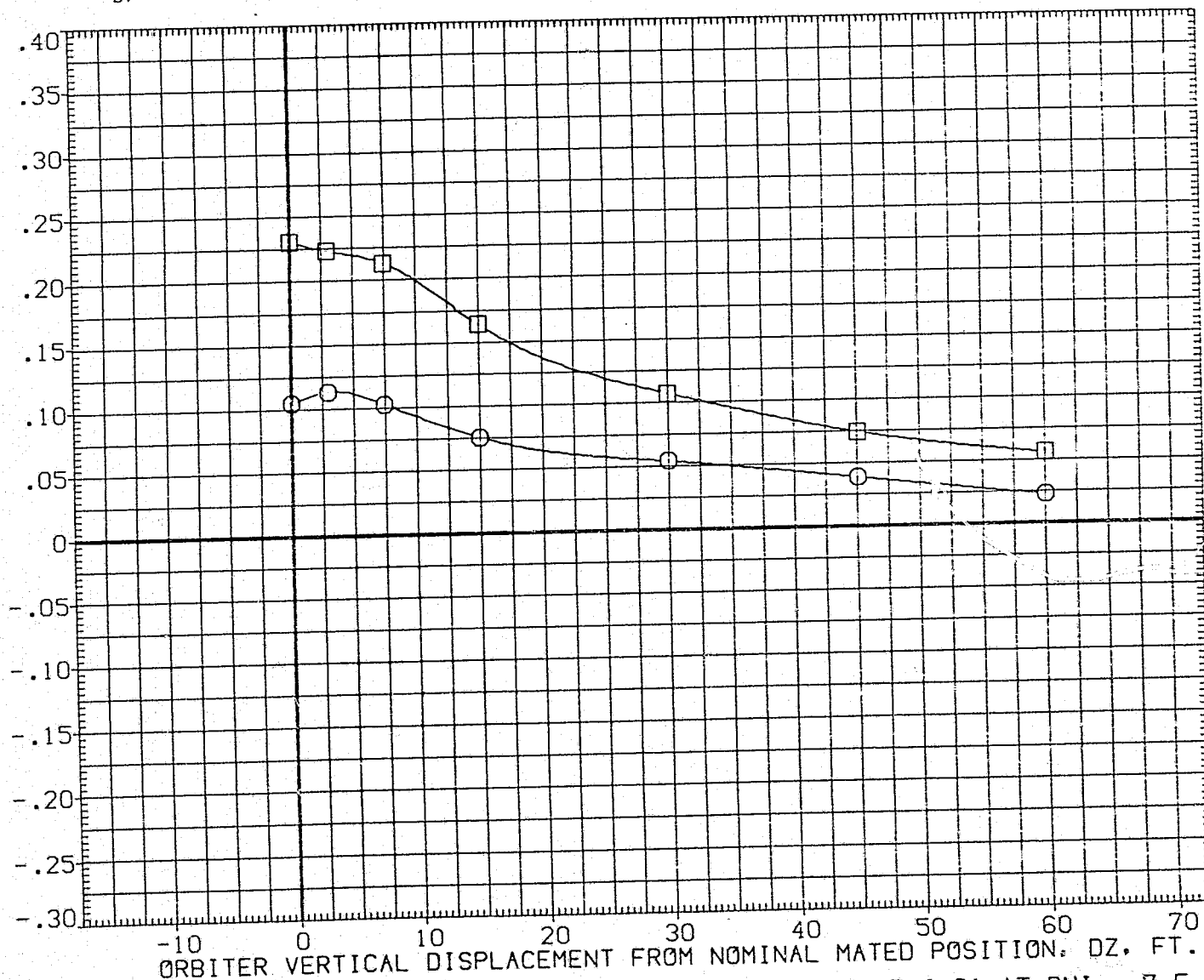


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	-5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	10.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

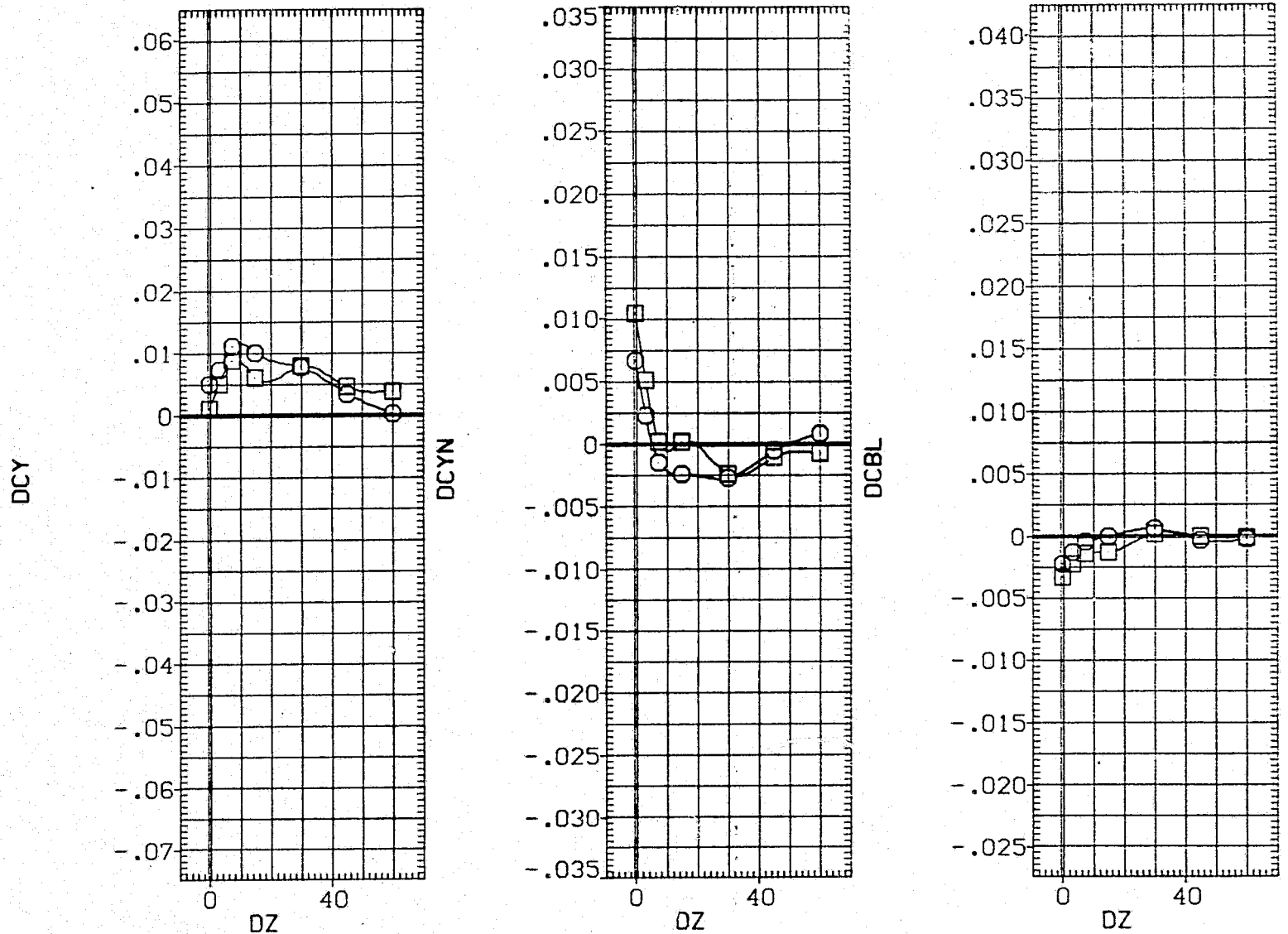


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC 4.000	BETAC -5.000
□	14.000	ELV-IB .000	ELV-OB 3.000
		ELEVON 5.000	MACH .600
		PHI 7.500	DX 10.000
		DY .000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2248.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

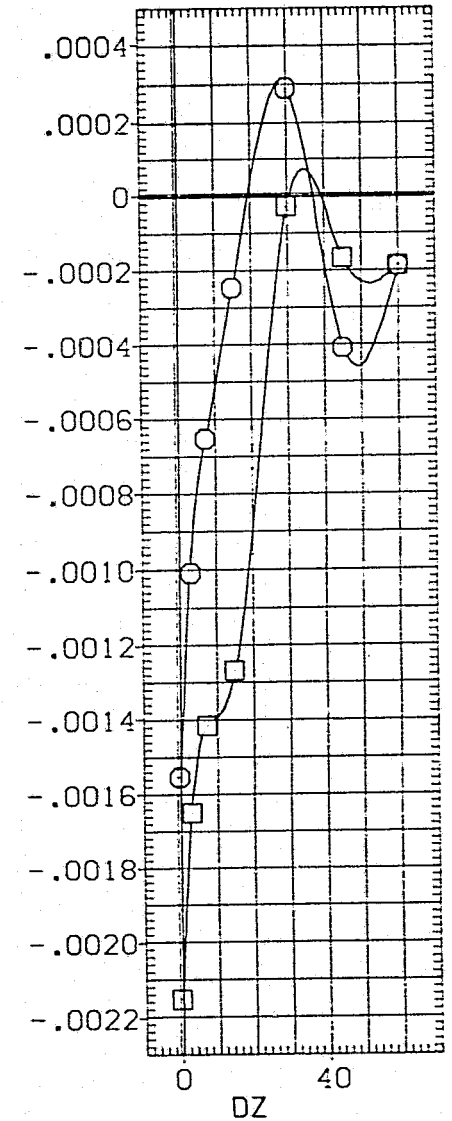
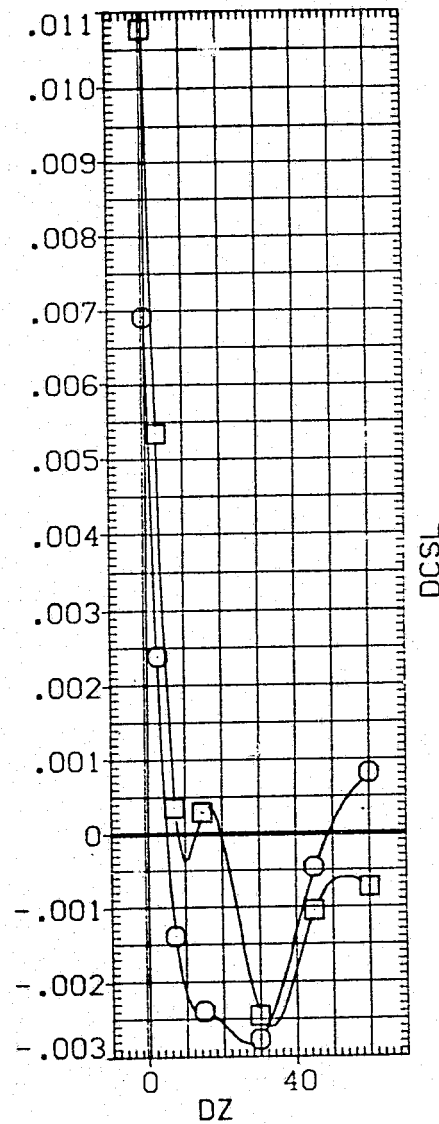
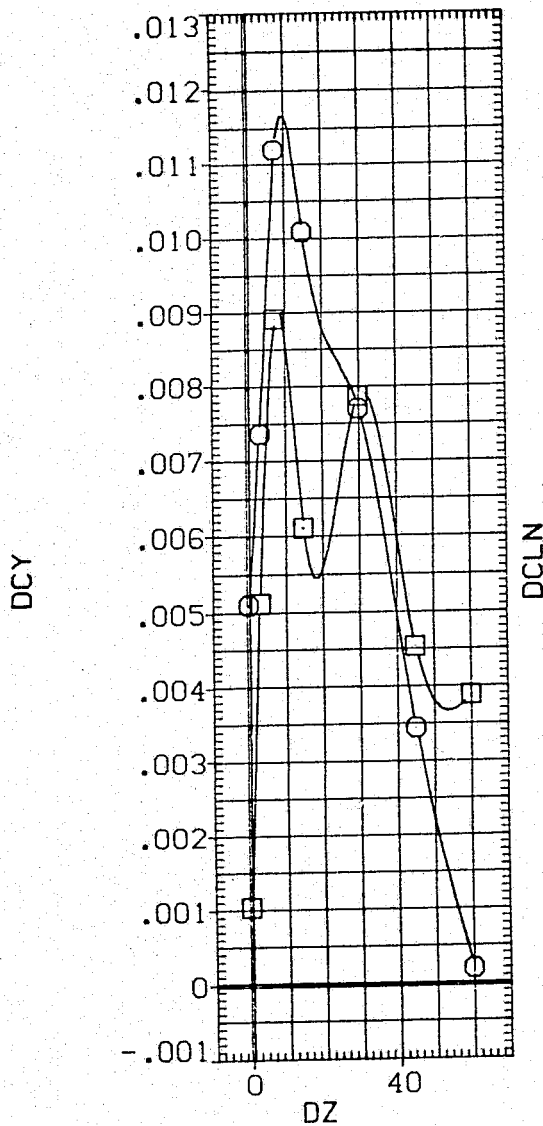


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGNC79)

SYMBOL



ALPHA0

10.000

ELV-1B

PARAMETRIC VALUES

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

7.500

DY

.000

DX

10.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF

5500.0000

50. FT.

LREF

327.7800

IN.

BREF

2348.3400

IN.

XMRP

1338.9000

IN. XC

YMRP

.0000

IN. YC

ZMRP

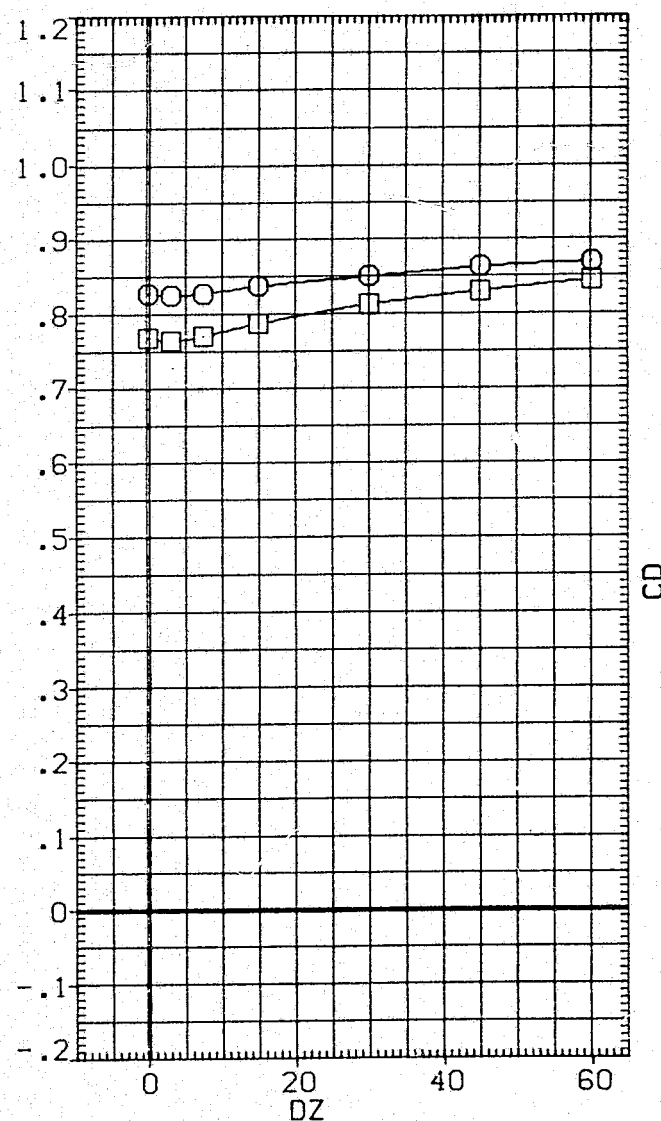
190.8000

IN. ZC

SCALE

.0300

CL



CD

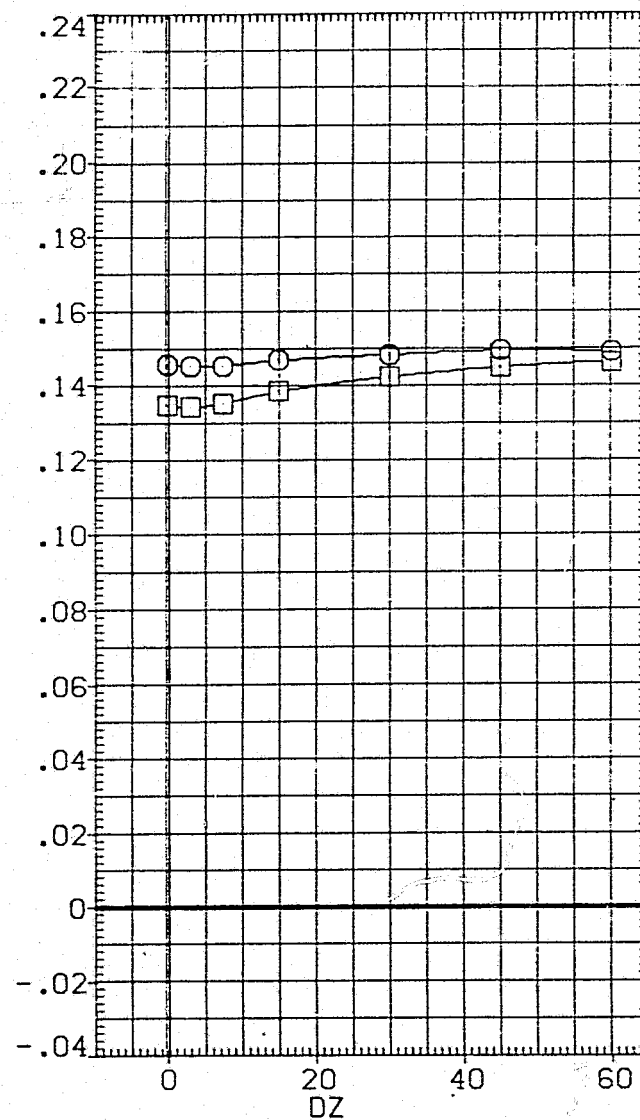


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA(MGN079)

SYMBOL

○
□

ALPHA0

10.000

ELV-1B

PARAMETRIC VALUES

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

7.500

DY

.000

DX

10.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

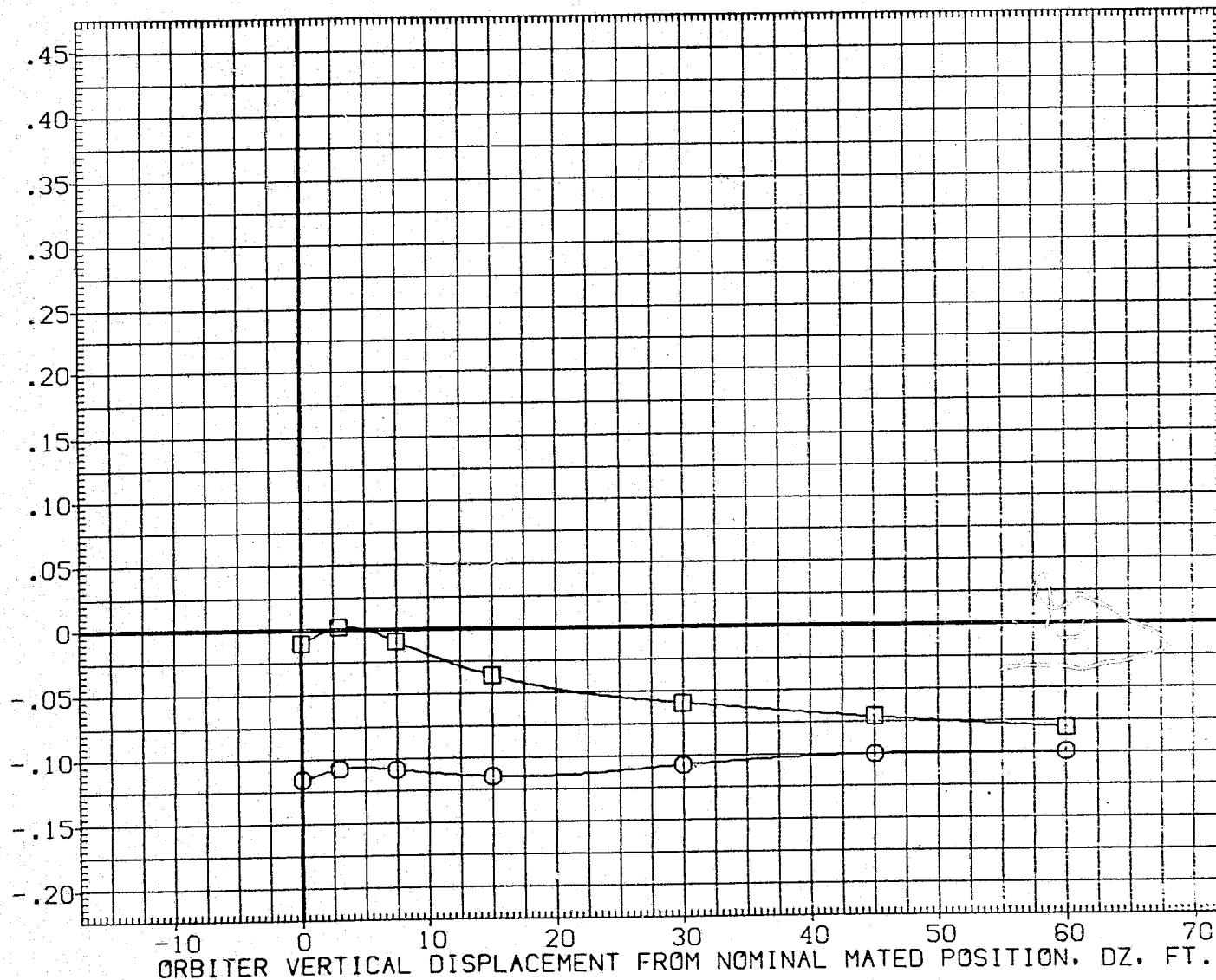


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELVON	.000	MACH	3.000
□	14.000	BETAD	5.000	BETAC	.600
		PHI	.000	DY	-5.000
		DX	7.500	ALPHAC	.000
			10.000		8.000

REFERENCE INFORMATION

SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1338.8000	IN.XC
YMRF	1.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

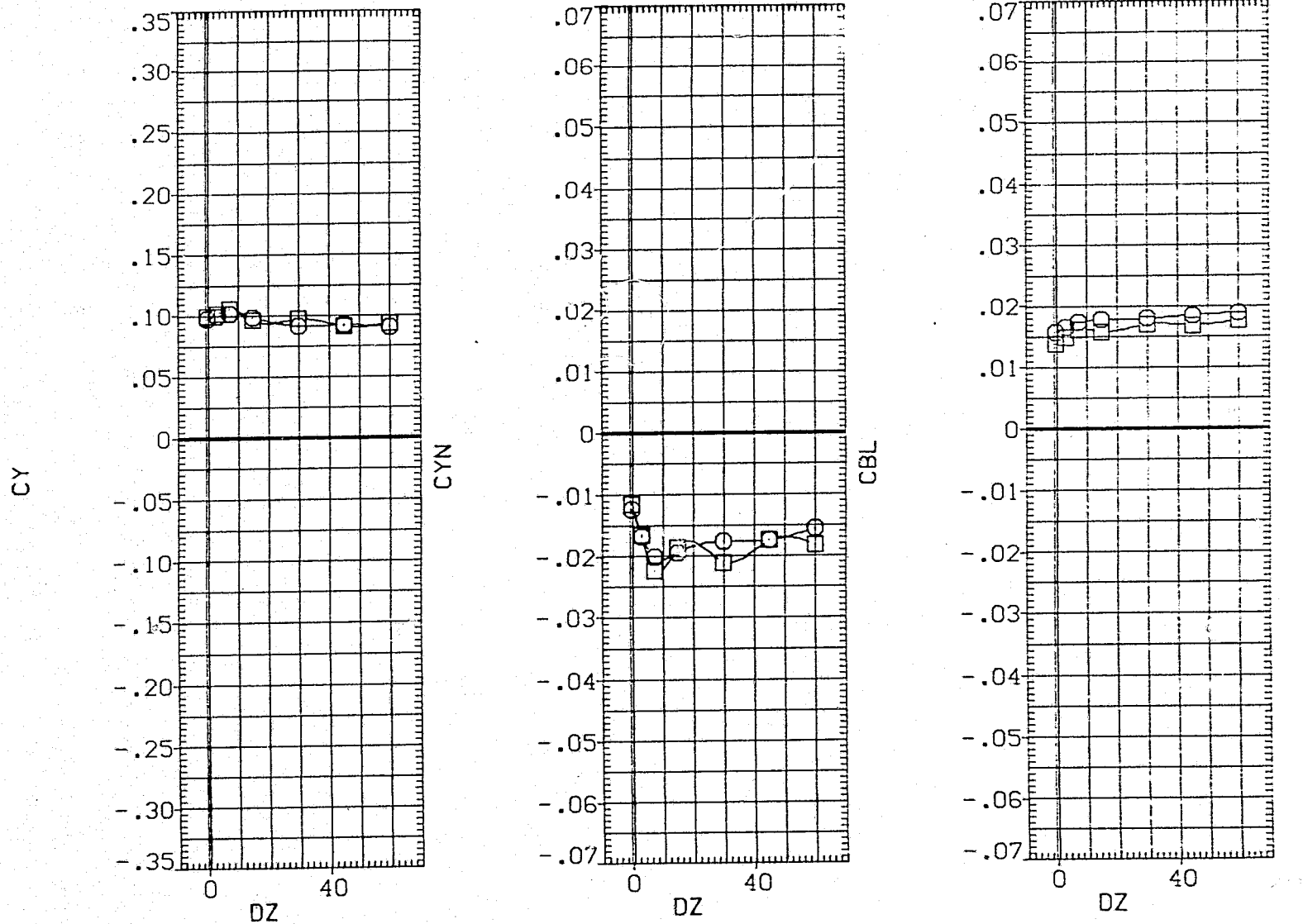


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ELV-1B .000	ELV-0B 3.000
□	14.000	ELEVON 5.000	MACH .600
		BETA0 .000	BETAC -5.000
		PHI 7.500	DY .000
		DX 10.000	ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SD.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

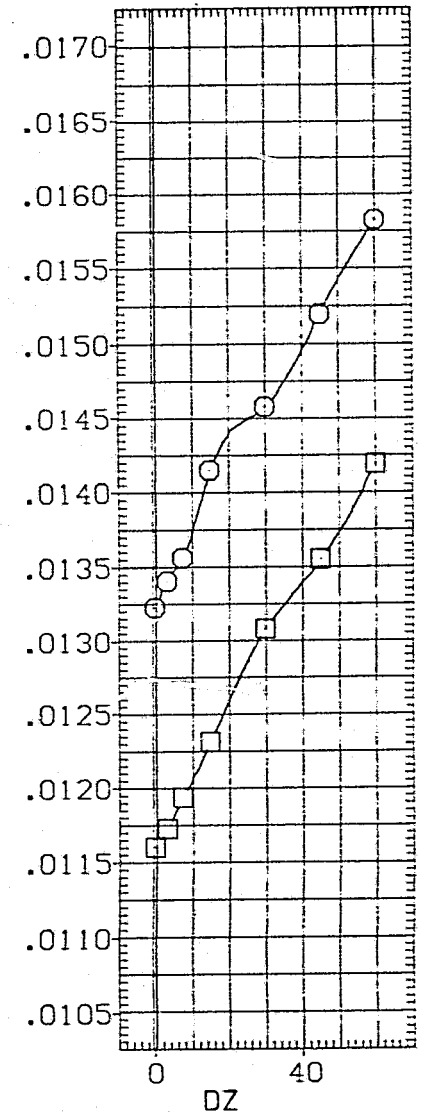
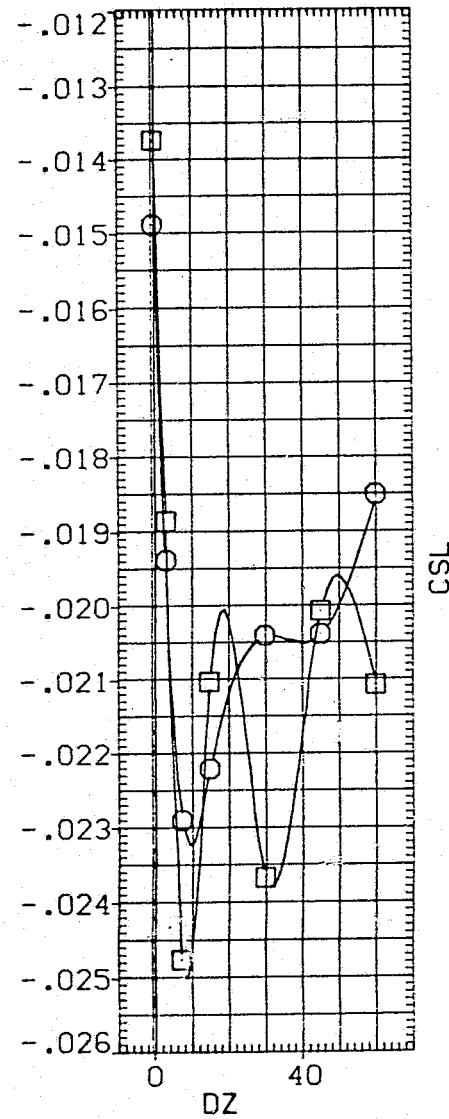
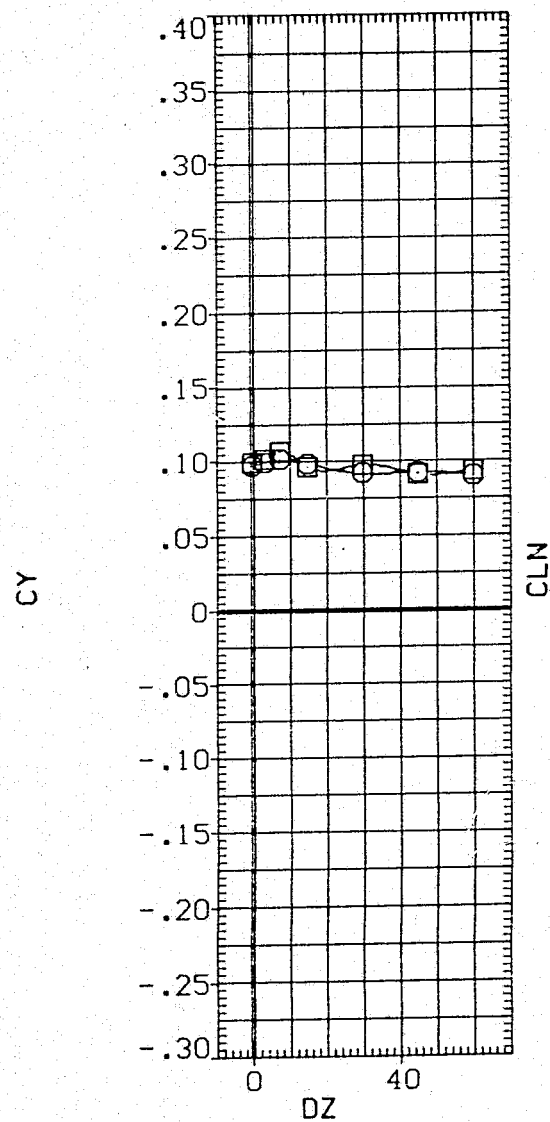


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	-5.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	10.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SS.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.8000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.0000	IN.ZC
SCALE	.0300	

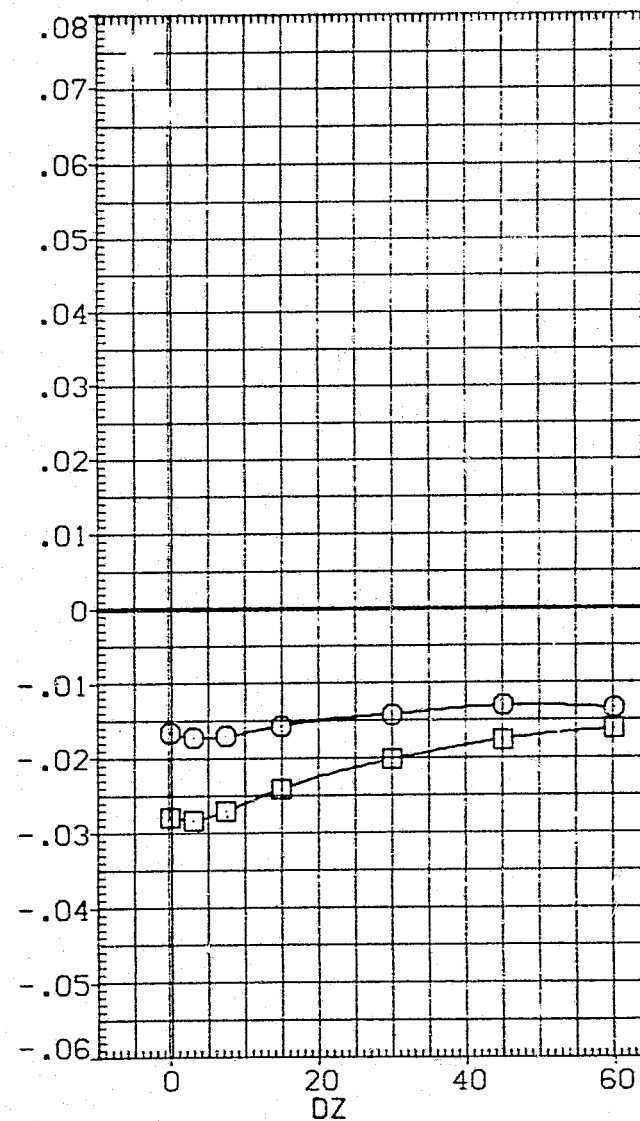
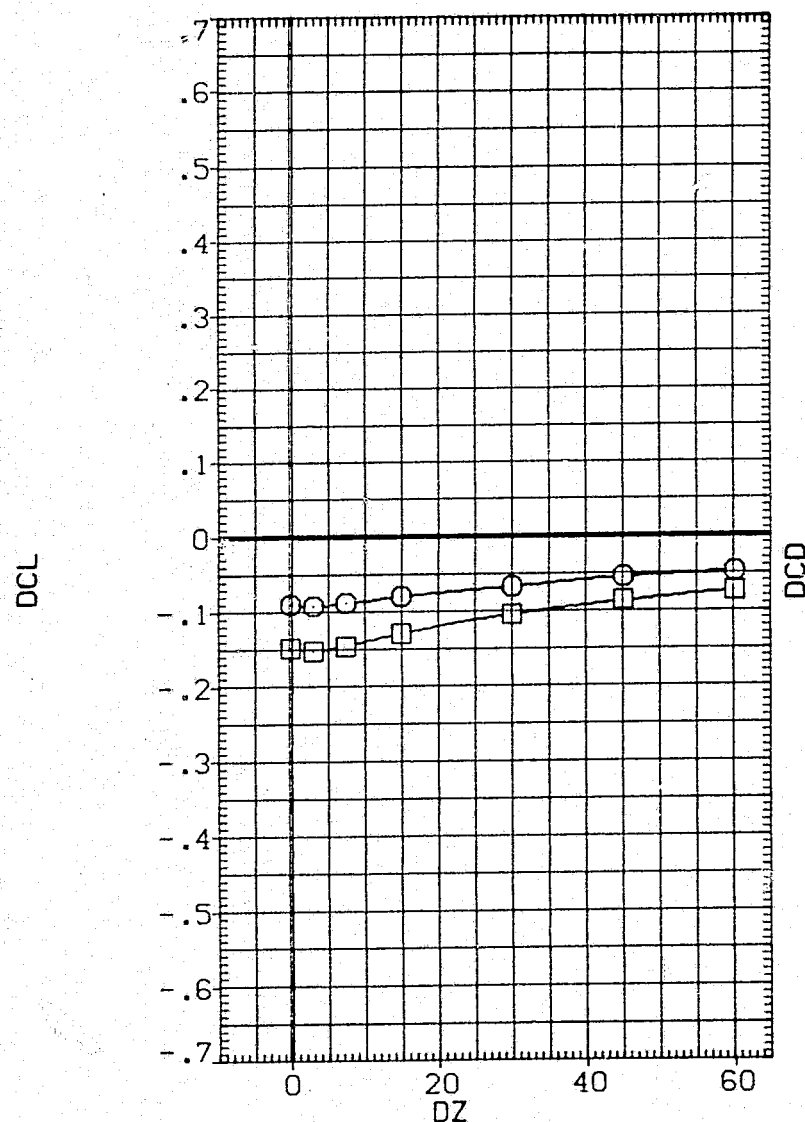


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	-3.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	OX	10.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

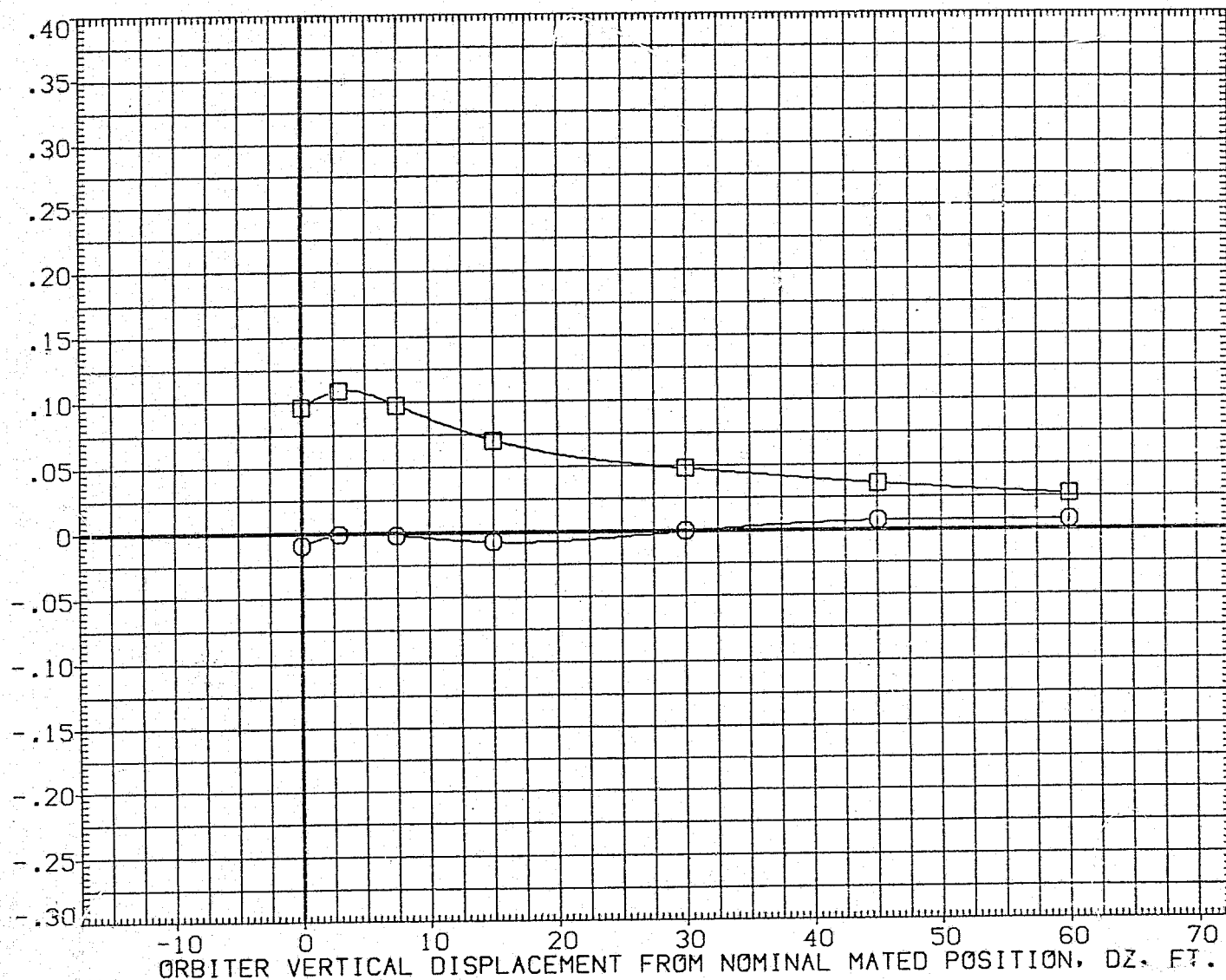


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 (747/1 01 S1) - (747/1)

D/S (079 - 034) (UGN079)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	ELV-IB	8.000	-5.000
□	14.000	ELEVON	.000	3.000
		PHI	5.000	.600
		DY	7.500	10.000
			.000	.000
			BETA0	

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7600	IN.
BREF	2348.0400	IN.
YMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

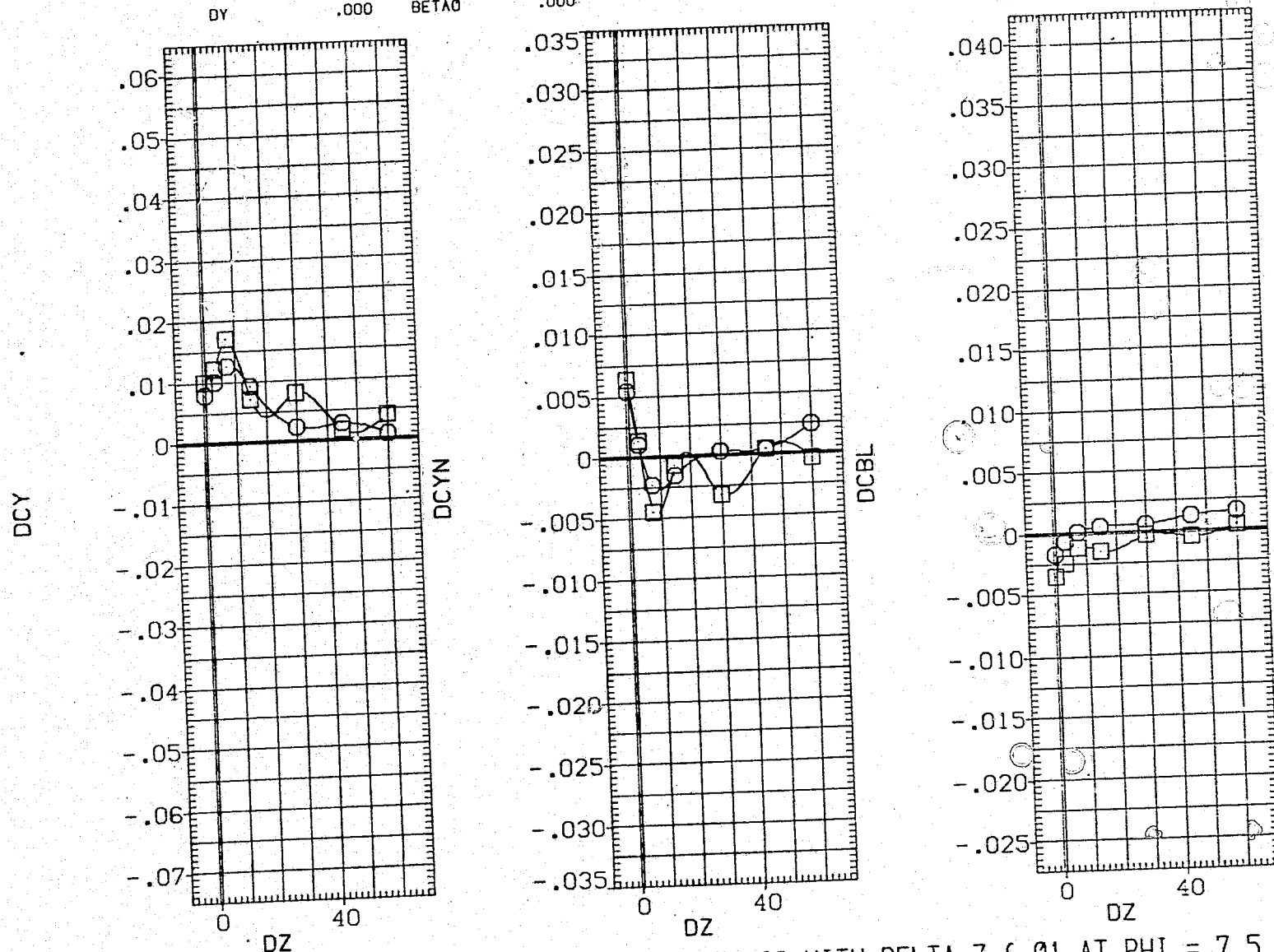


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	ELV-1B	8.000	-5.000
□	14.000	ELEVON	.000	3.000
		PHI	5.000	.600
		DX	7.500	10.000
		DY	.000	BETA0
				.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	.

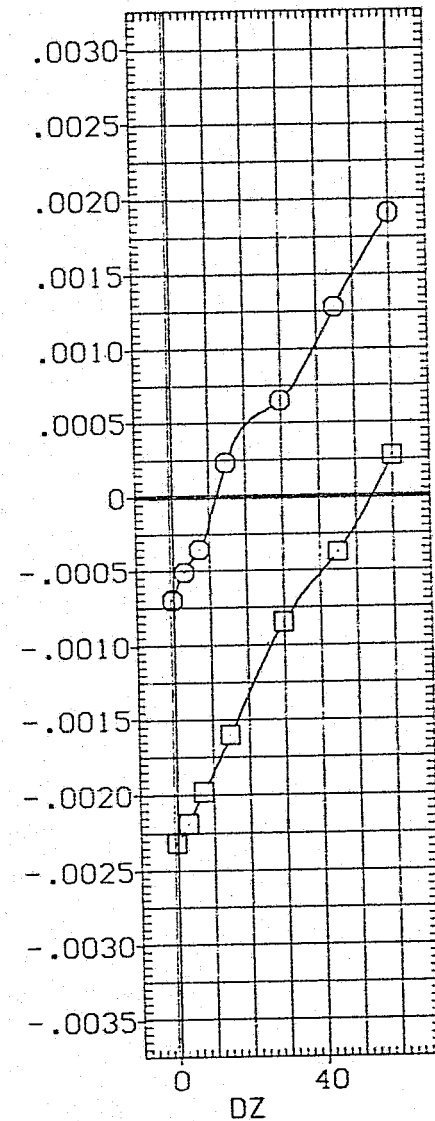
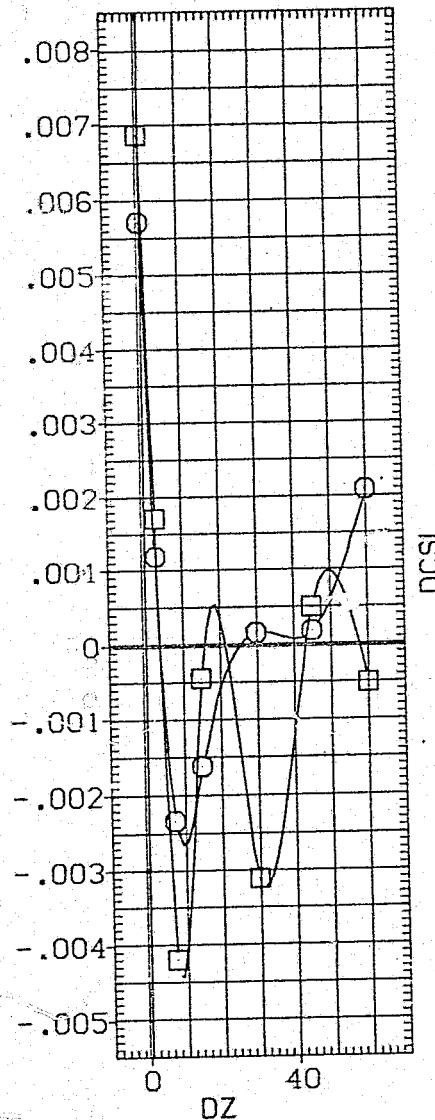
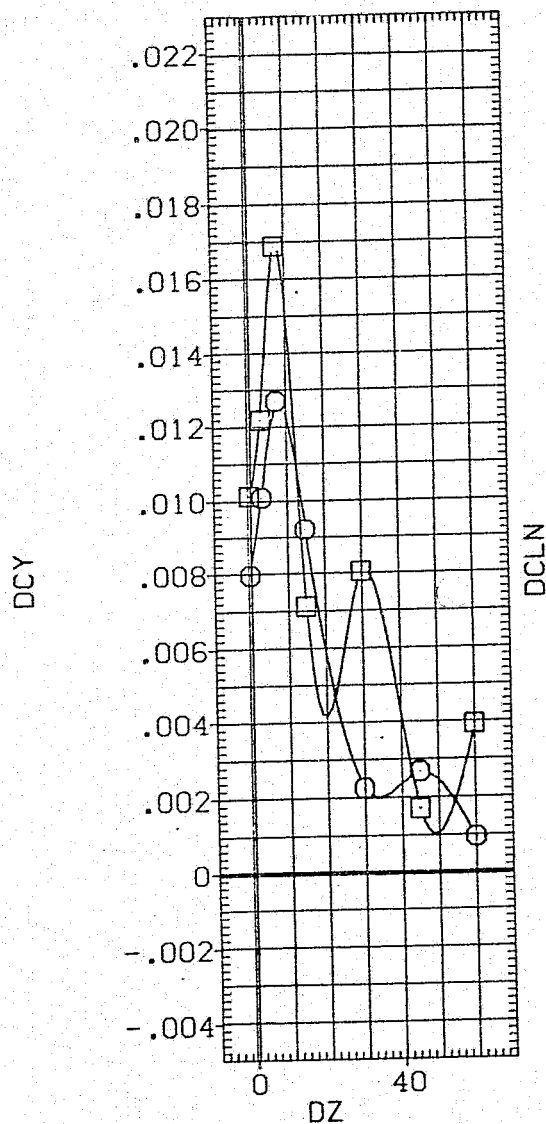


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGN080)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.600	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

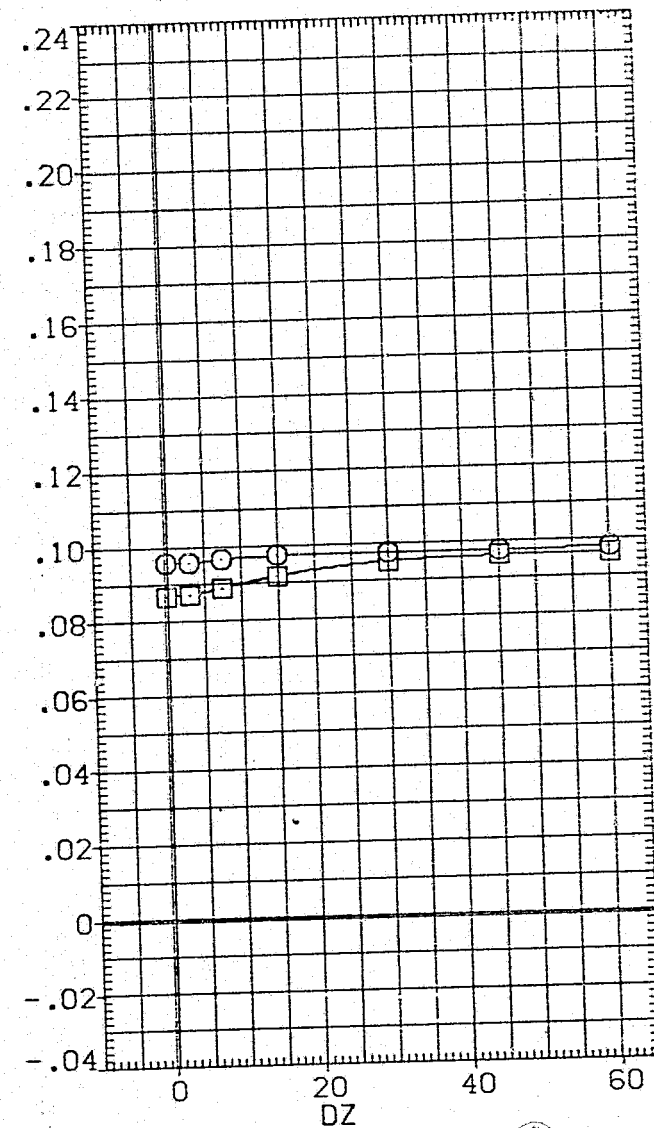
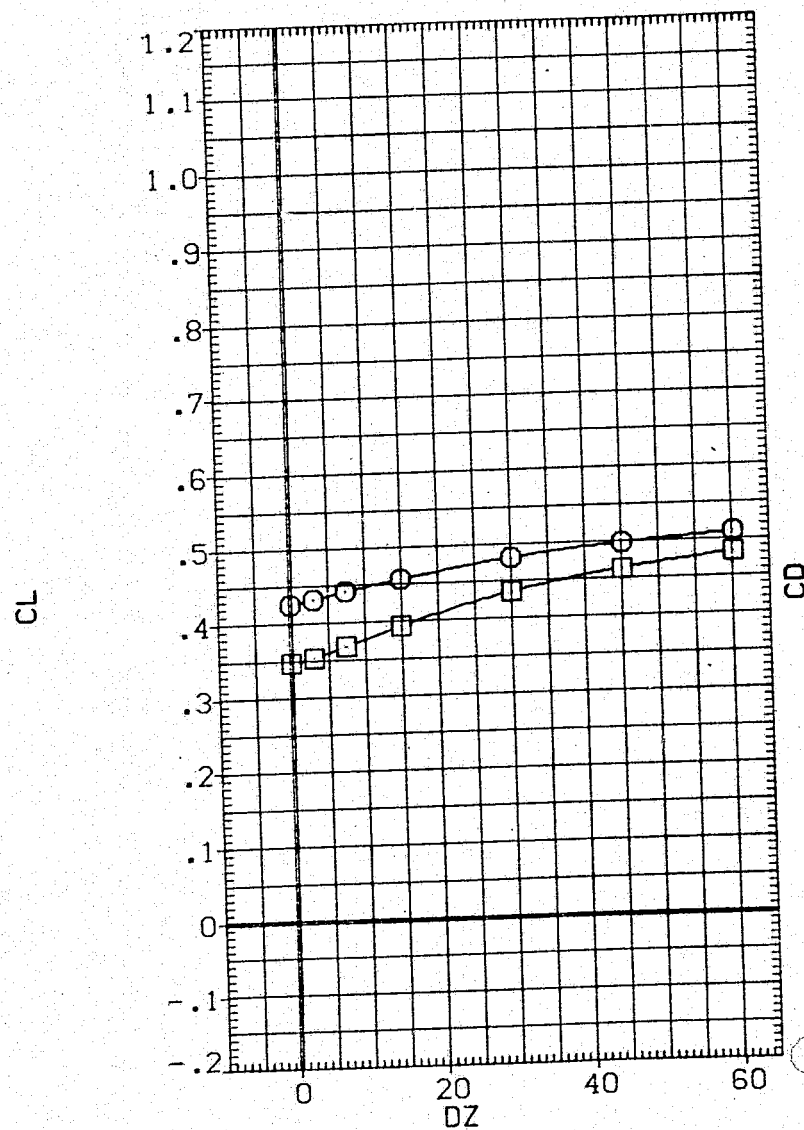


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
10.000	ELV-IB	.000	ELV-OB	3.000	
14.000	ELEVON	5.000	MACH	.600	
	BETA0	.000	BETAC	-5.000	
	PHI	7.500	DY	10.000	
	OX	.000	ALPHAC	4.000	

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7600	IN.
BREF	2348.0400	IN.
XMRP	1339.9900	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

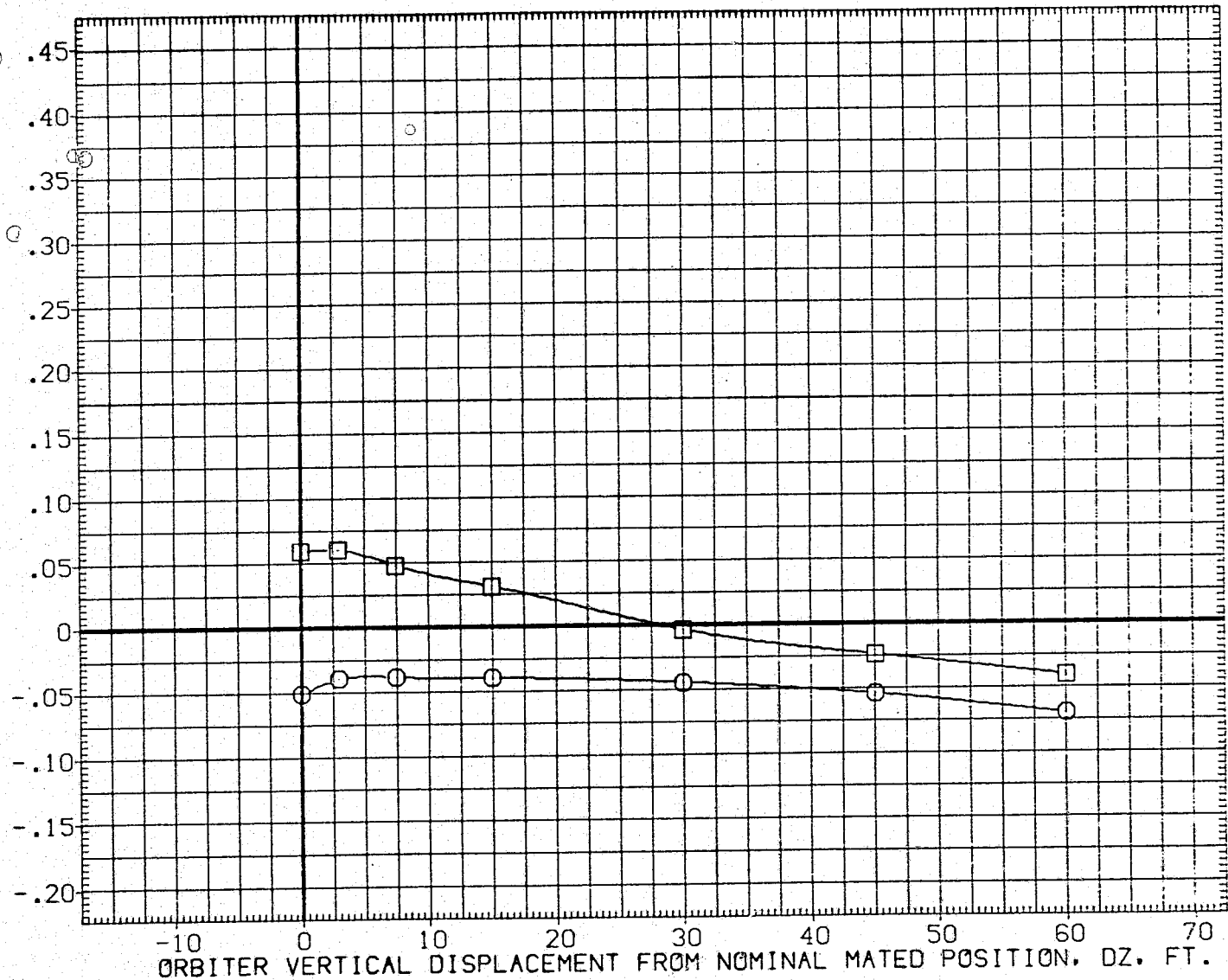


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	VALUES
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	7.500	DY	-5.000
		DX	.000	ALPHAC	10.000
					4.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

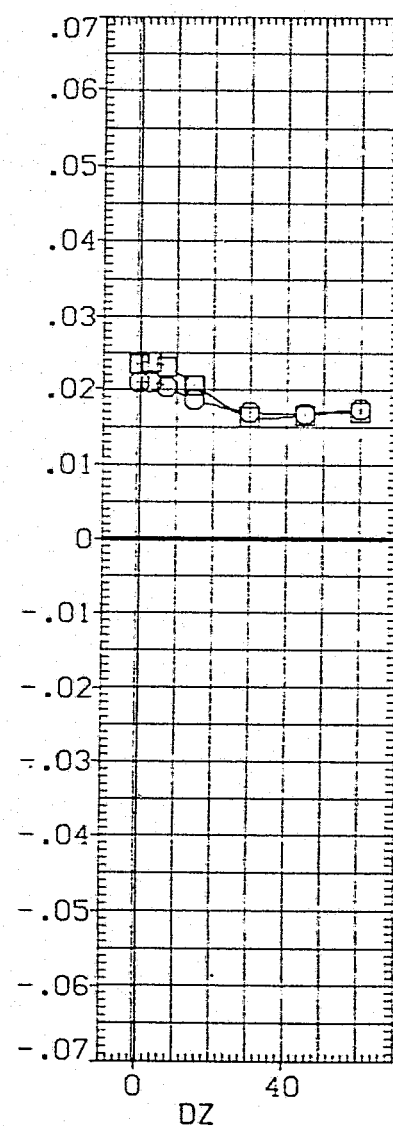
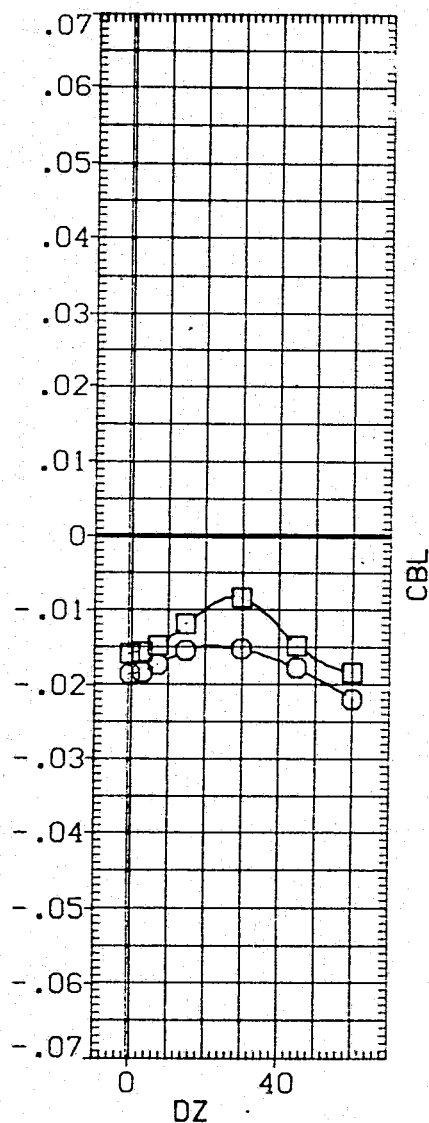
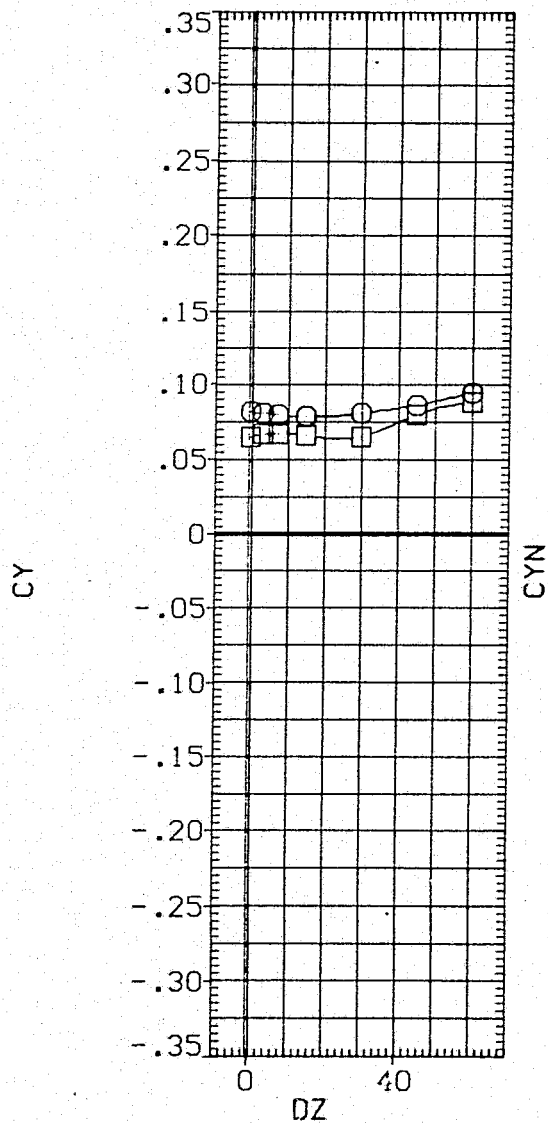


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ELV-IB

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

ELV-OB

MACH

BETAC

DY

ALPHAC

3.000

.600

-5.000

10.000

4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8300	IN.ZC
SCALE	.0300	

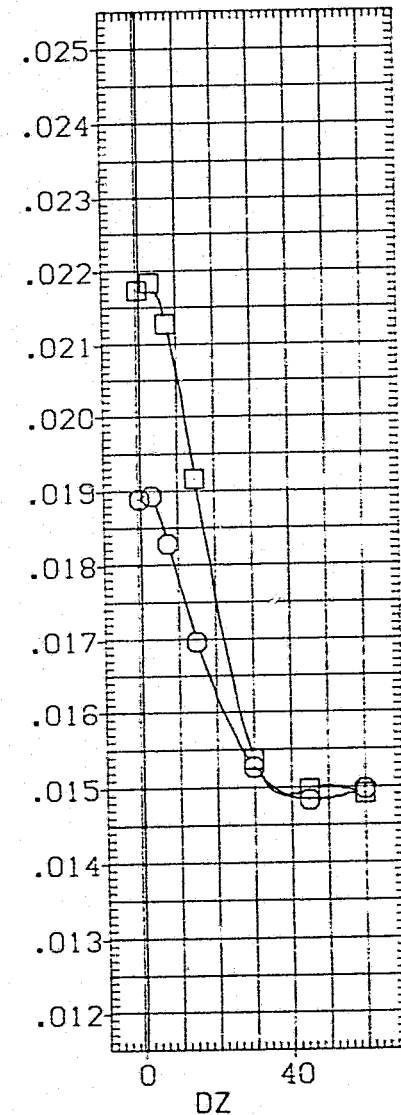
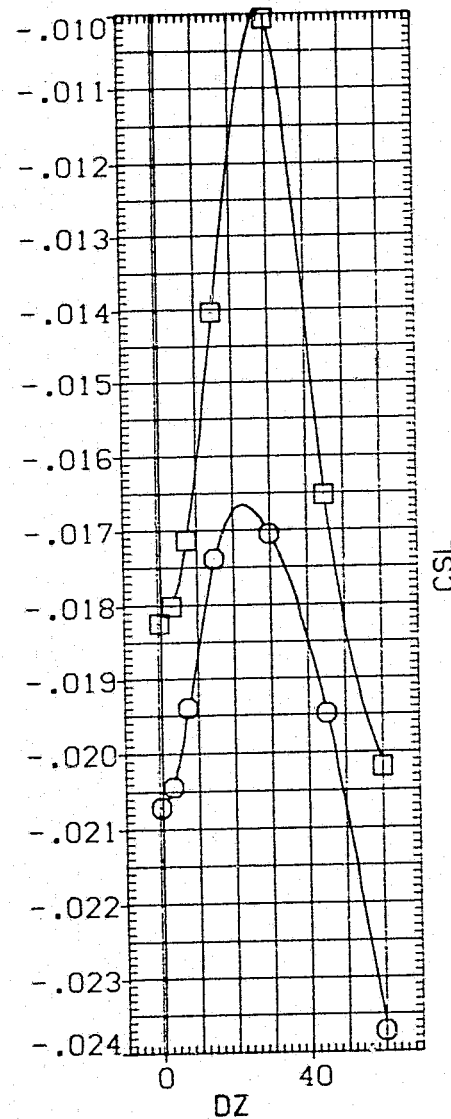
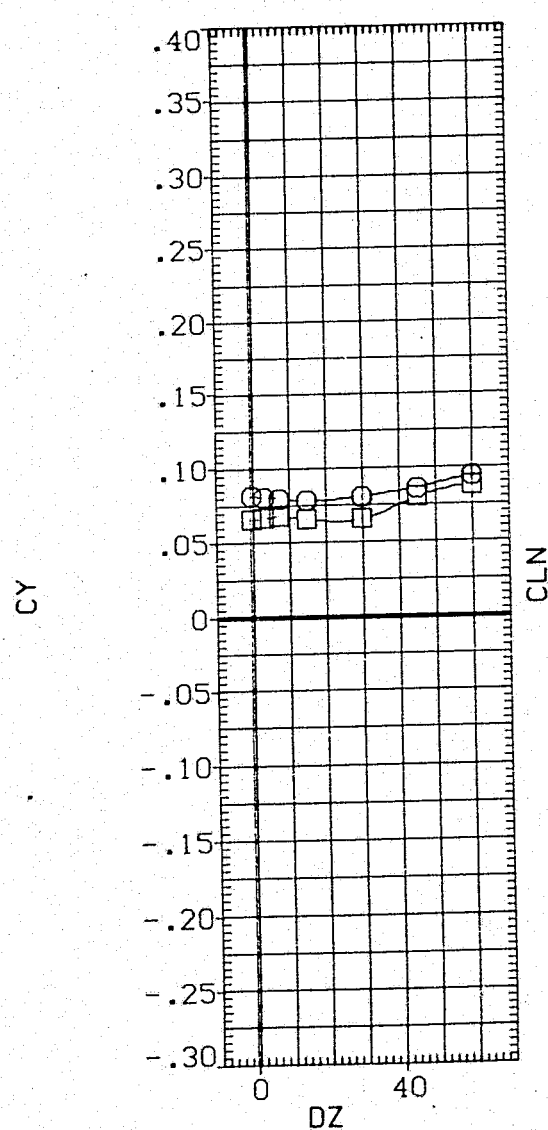


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

-5.000

ELV-IB

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

PHI

7.500

DX

.000

DY

10.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000

SQ.FT.

LREF 327.7800

IN.

BREF 2349.0400

IN.

XMRP 1338.9000

IN.XC

YMRP .0000

IN.YC

ZMRP 190.8000

IN.ZC

SCALE .0300

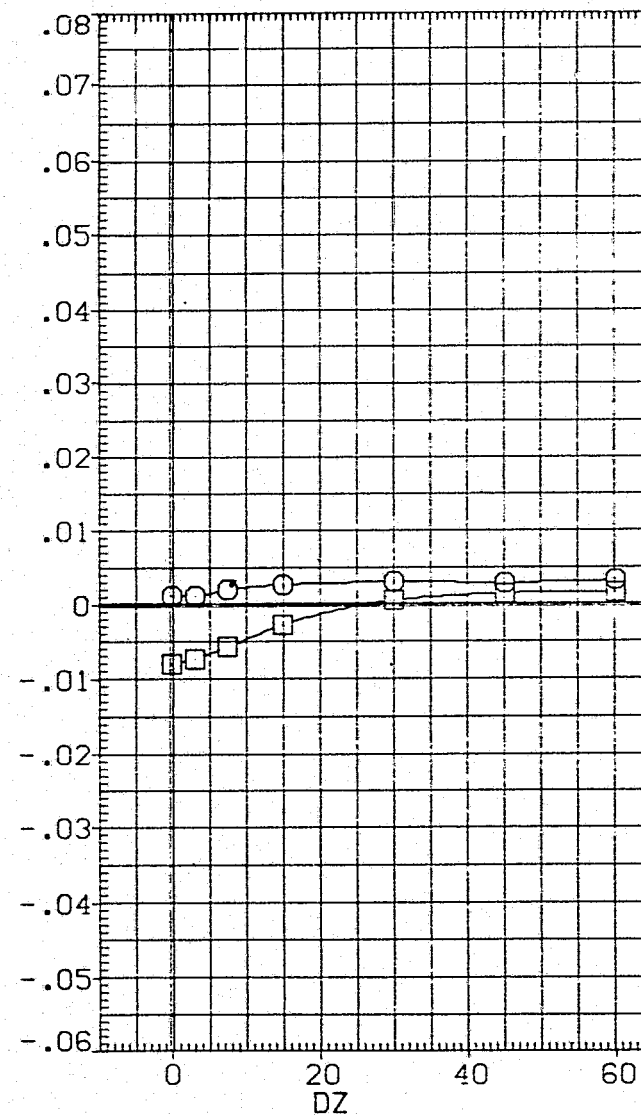
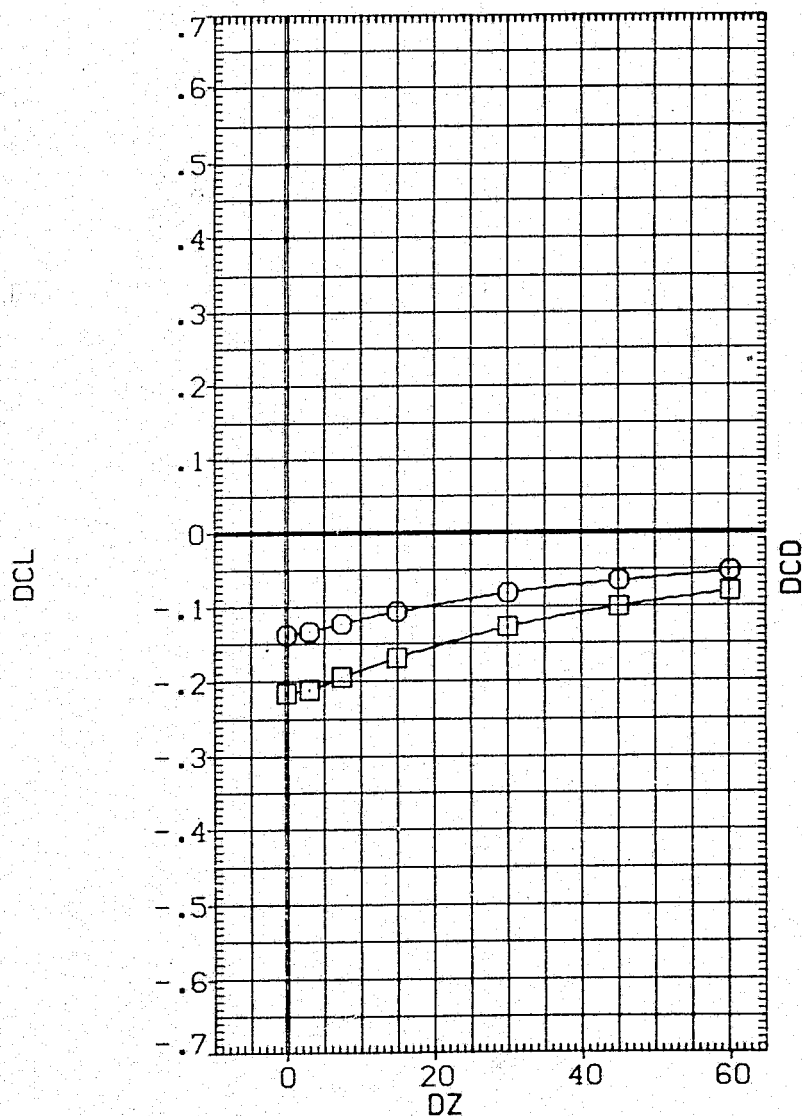


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○

□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

BETAC

-5.000

ELV-0B

3.000

MACH

.600

DX

.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.6400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

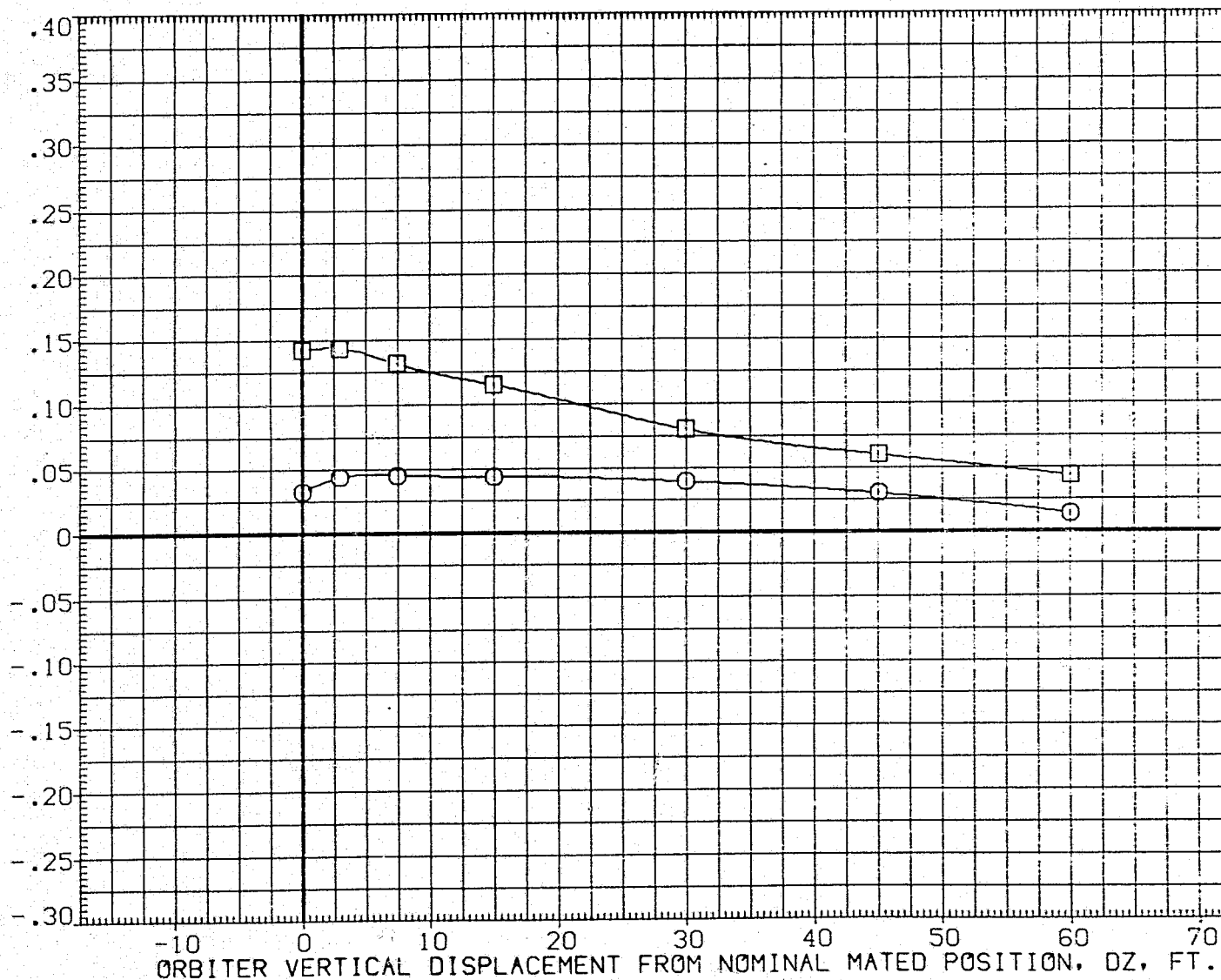


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC 4.000	BETAC -5.000
□	14.000	ELV-1B .000	ELV-0B 3.000
		ELEVON 5.000	MACH .600
		PHI 7.500	DX .000
		DY 10.000	BETA0 .000

REFERENCE INFORMATION

SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1335.0000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

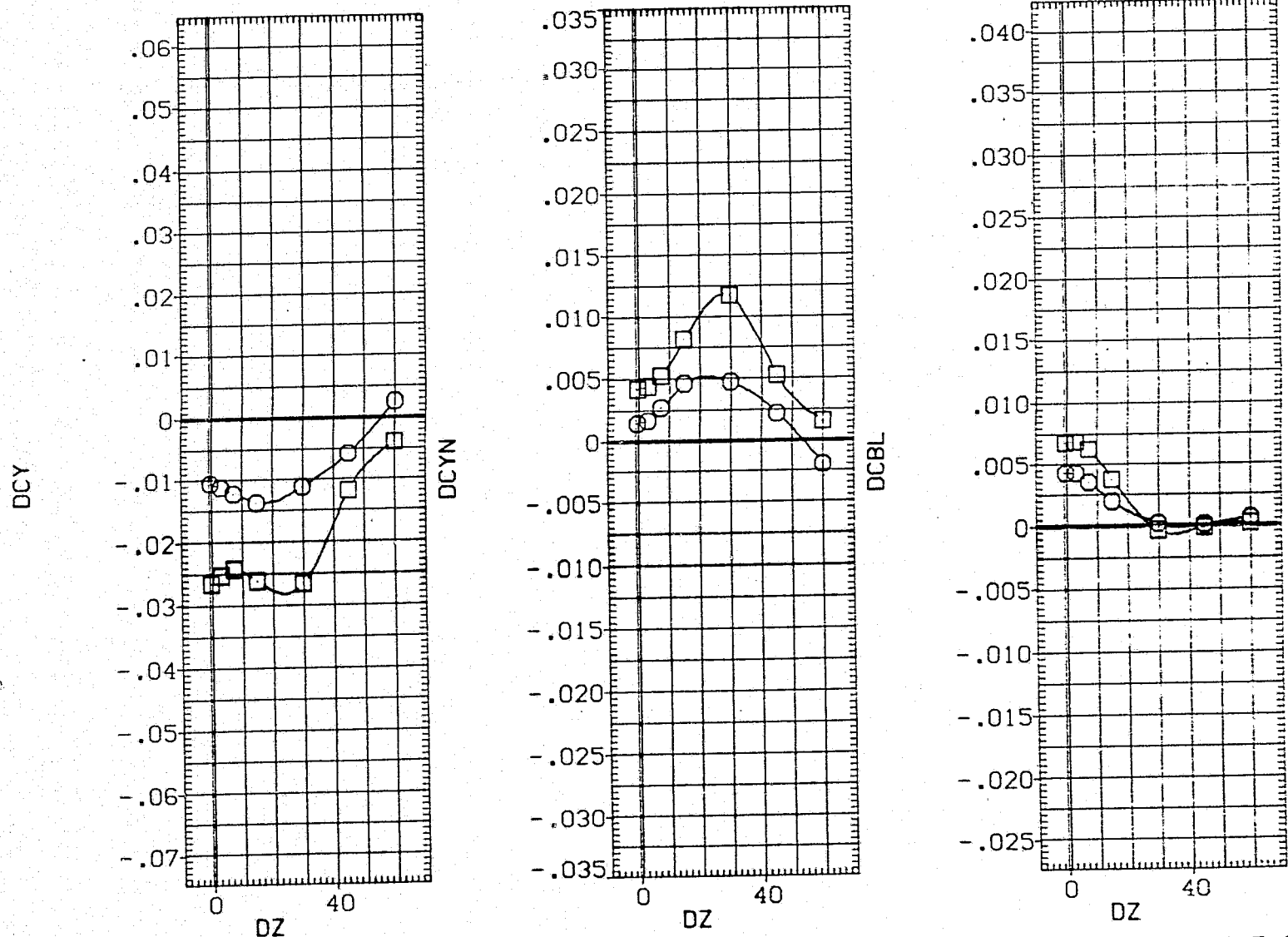


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC -5.000
□	14.000	ELV-18 .000 ELV-08 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX .000
		DY 10.000 BETAO .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

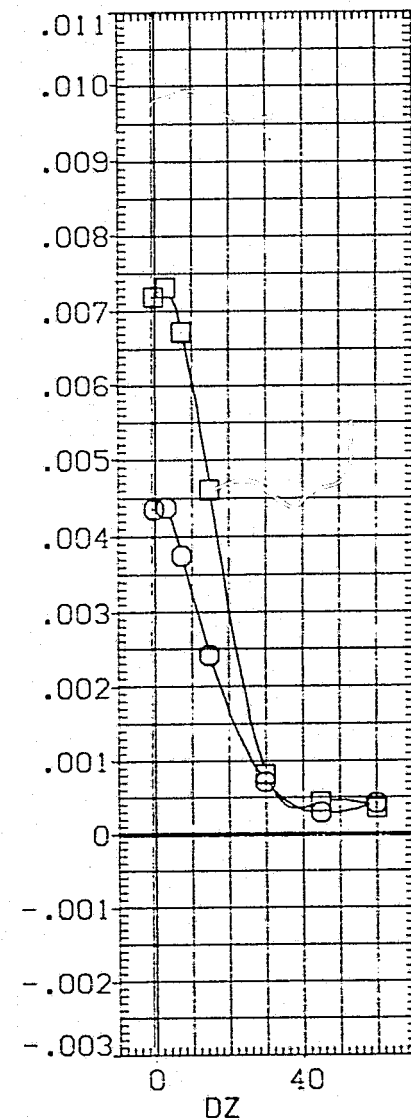
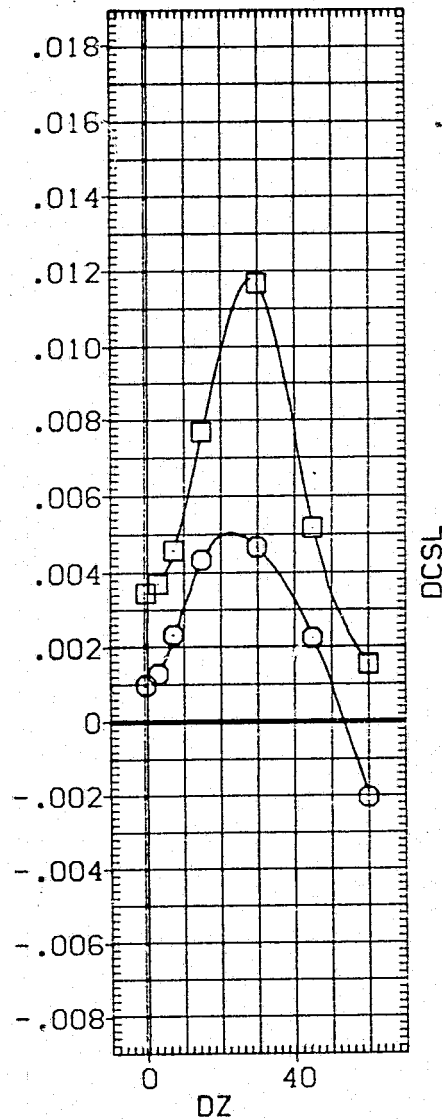
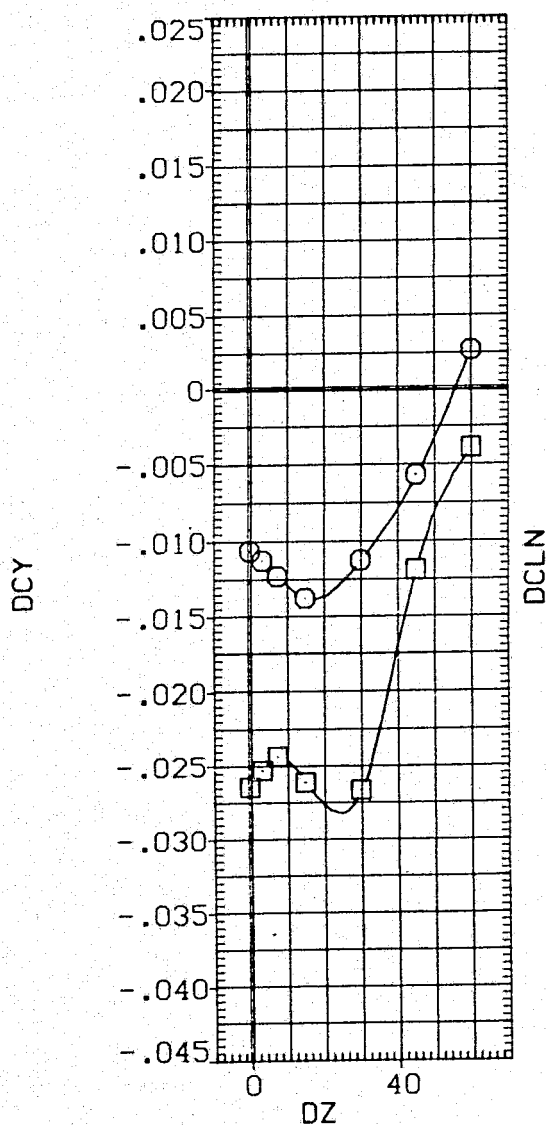


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z. (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-18	.000	ELV-08	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	-5.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

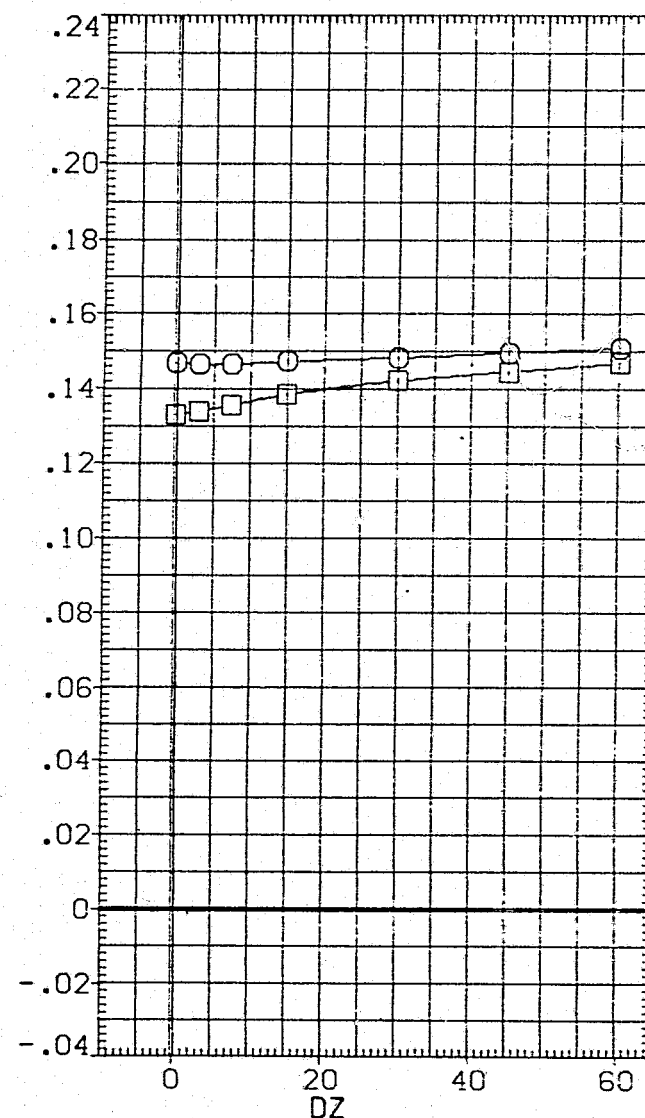
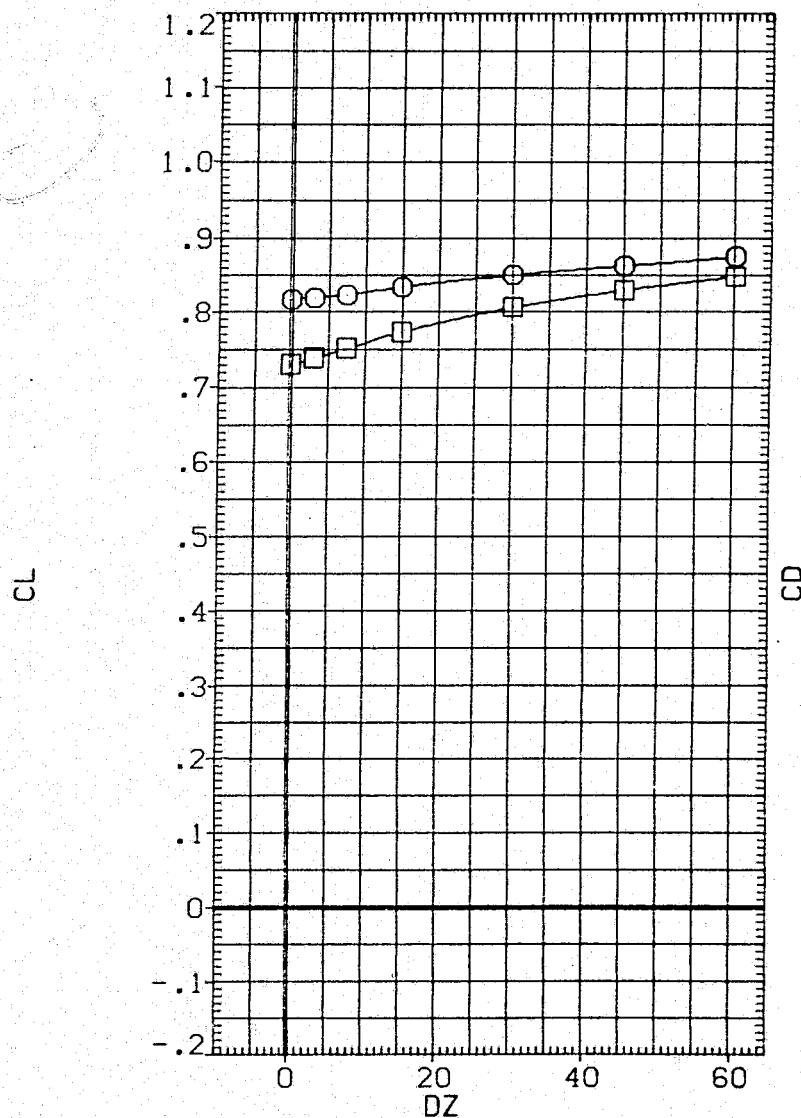


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-1B

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

-5.000

10.000

8.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

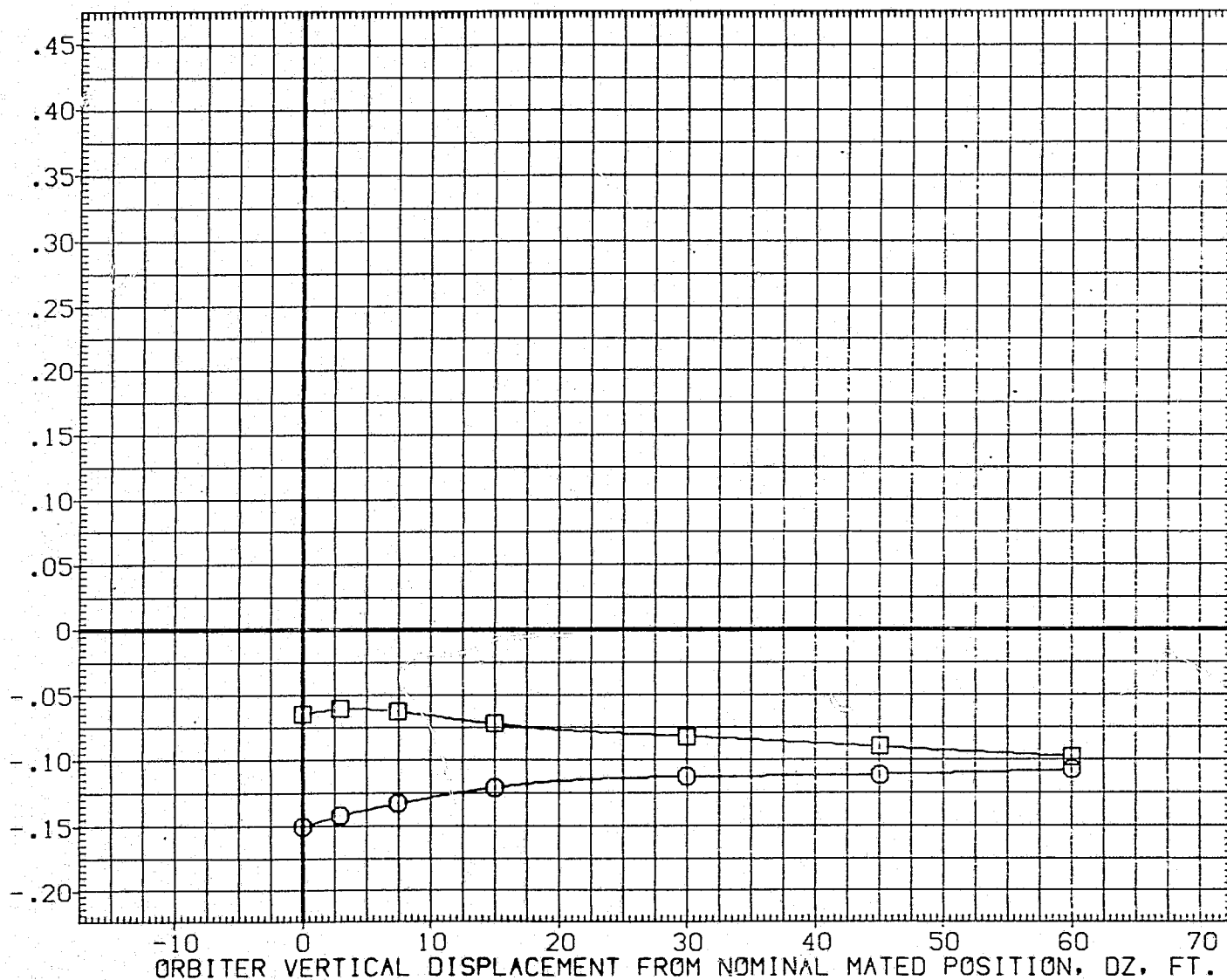


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ELV-1B	.000	ELV-0B	3.000
○	14.000	ELEVON	5.000	MACH	.600
□		BETA0	.000	BETAC	-5.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	377.0000	IN.
BREF	23.0000	IN.
XMRP	130.0000	IN.XC
YMRP	0.0000	IN.YC
ZMRP	190.0000	IN.ZC
SCALE	.0300	

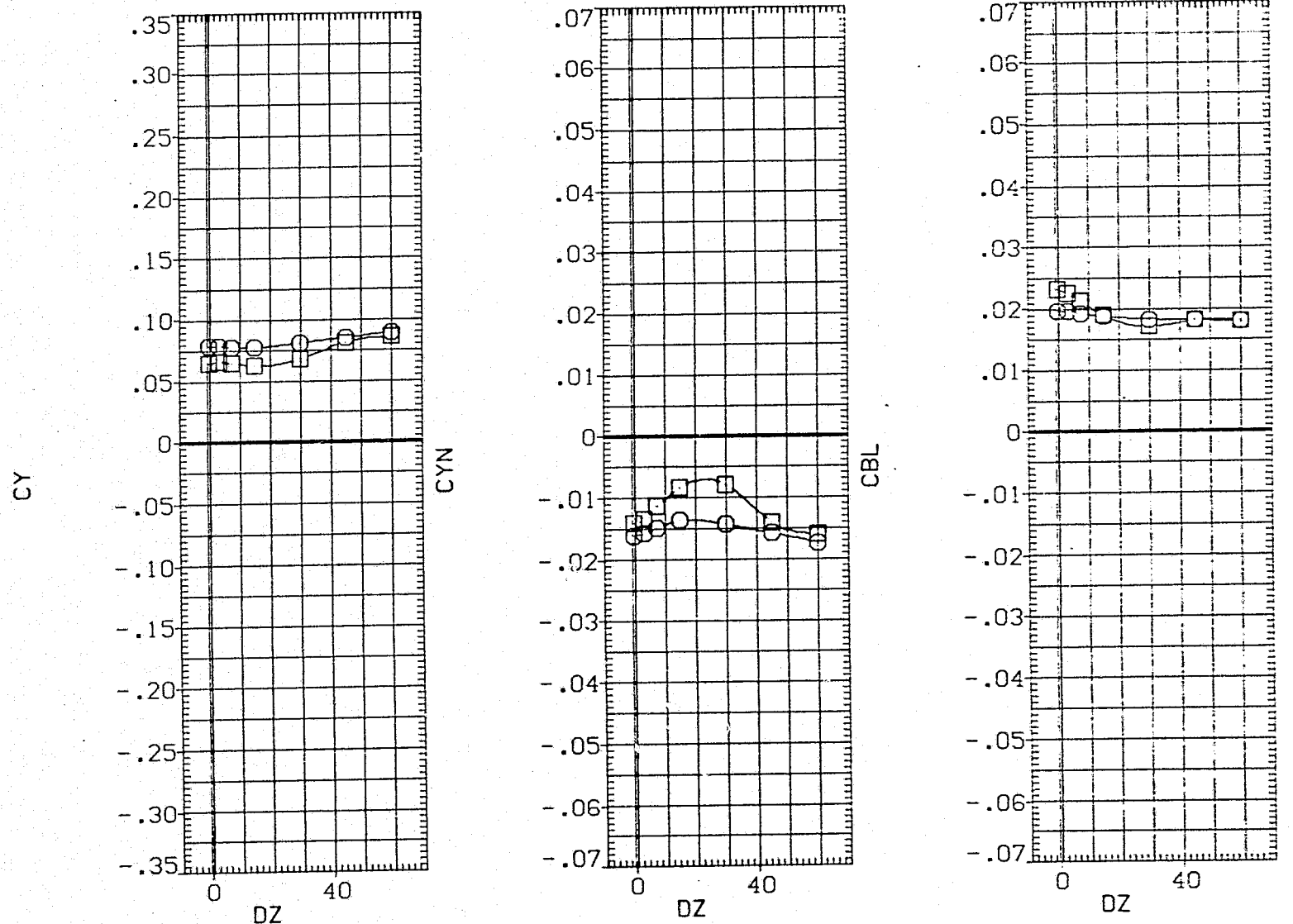


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

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CARRIER DATA (MGN082)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	DY	-5.000
		DX	7.500	ALPHAC	10.000
			.000		8.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

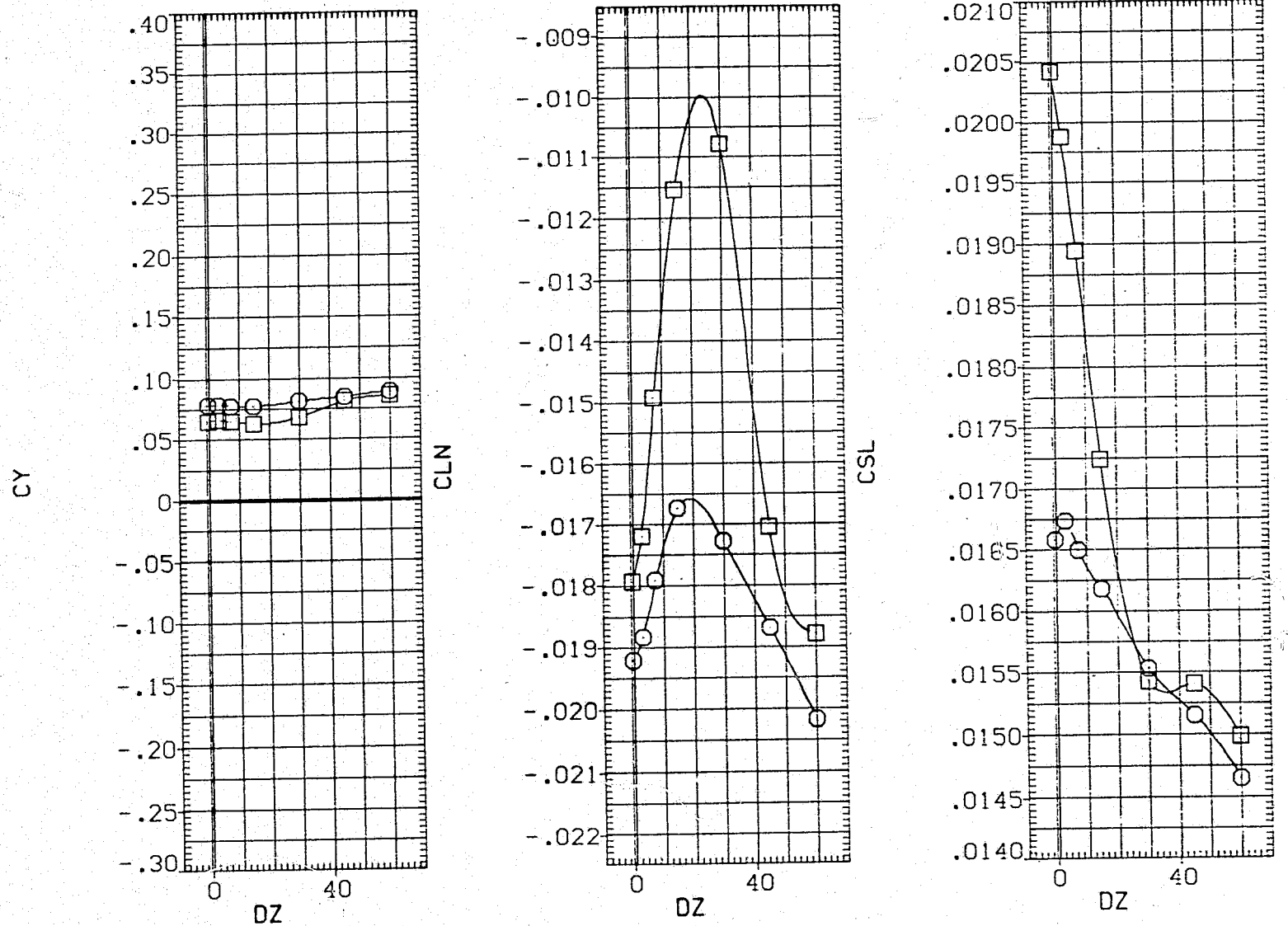


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES			
	10.000	ALPHAC	8.000	BETAC	-5.000	
○	14.000	ELV-1B	.000	ELV-0B	2.200	
□		ELEVON	5.000	MACH	.600	
		PHI	7.500	DX	.000	
		DY	10.000	BETA0	.000	

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7300	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

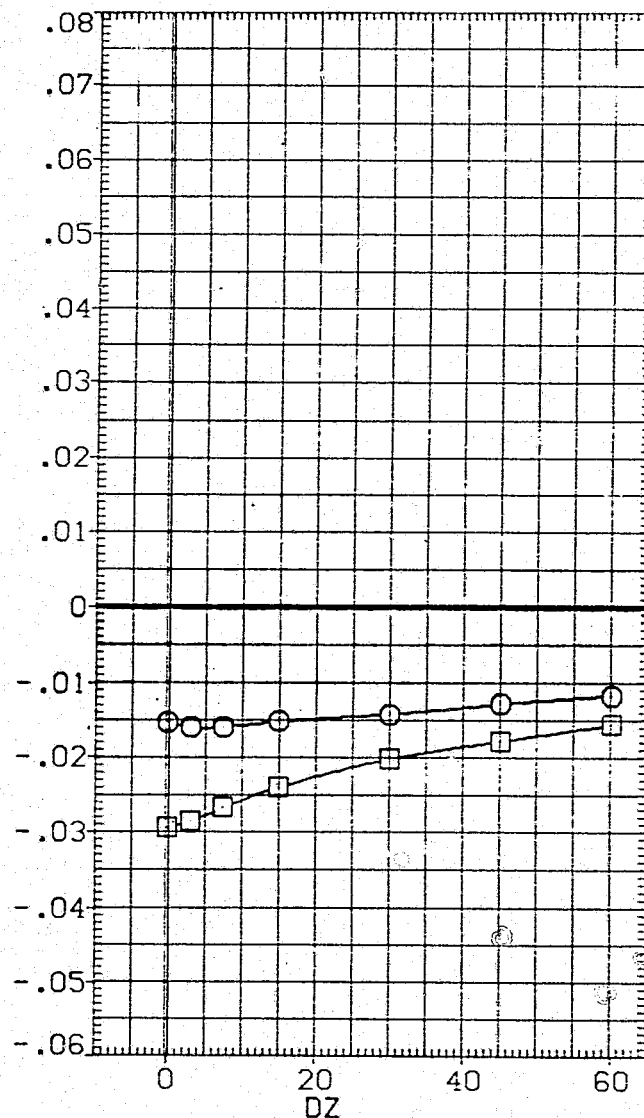
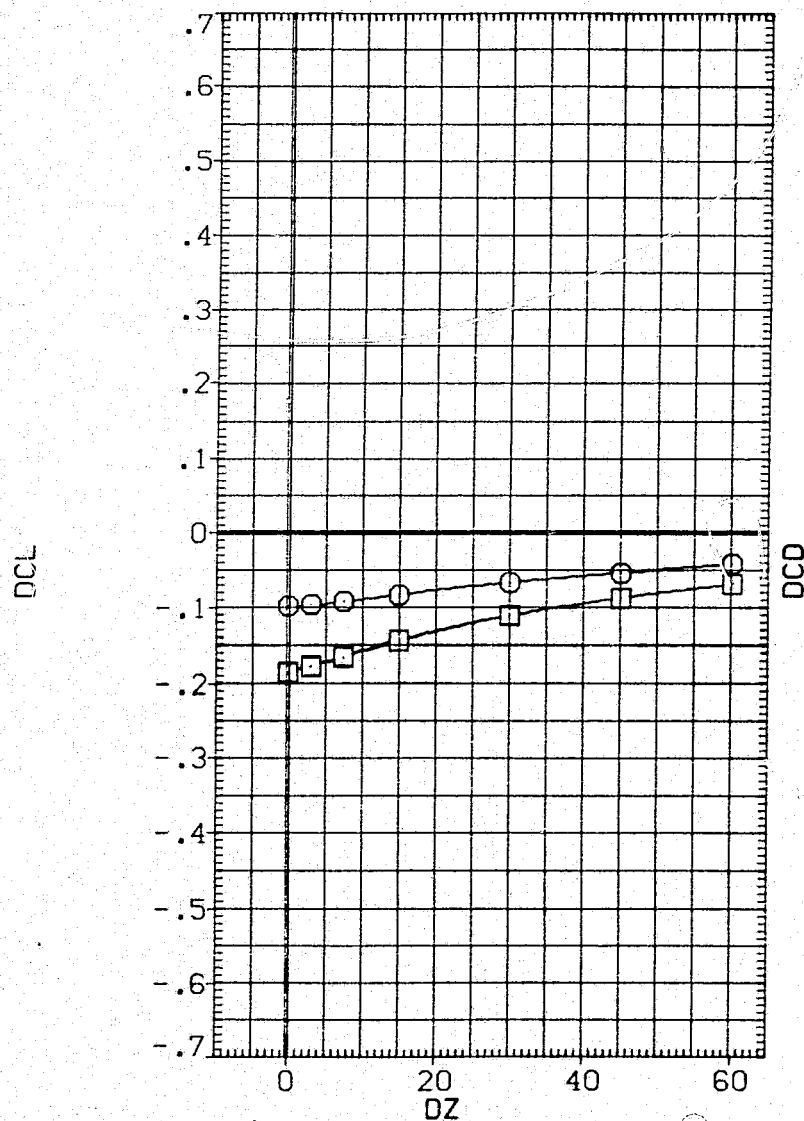


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000
14.000ALPHAC
ELV-IB
ELEVON
PHI
DY

PARAMETRIC VALUES

8.000
.000
5.000
7.500
10.000BETAC
ELV-OB
MACH
DX
BETA0-5.000
3.000
.600
.000
.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

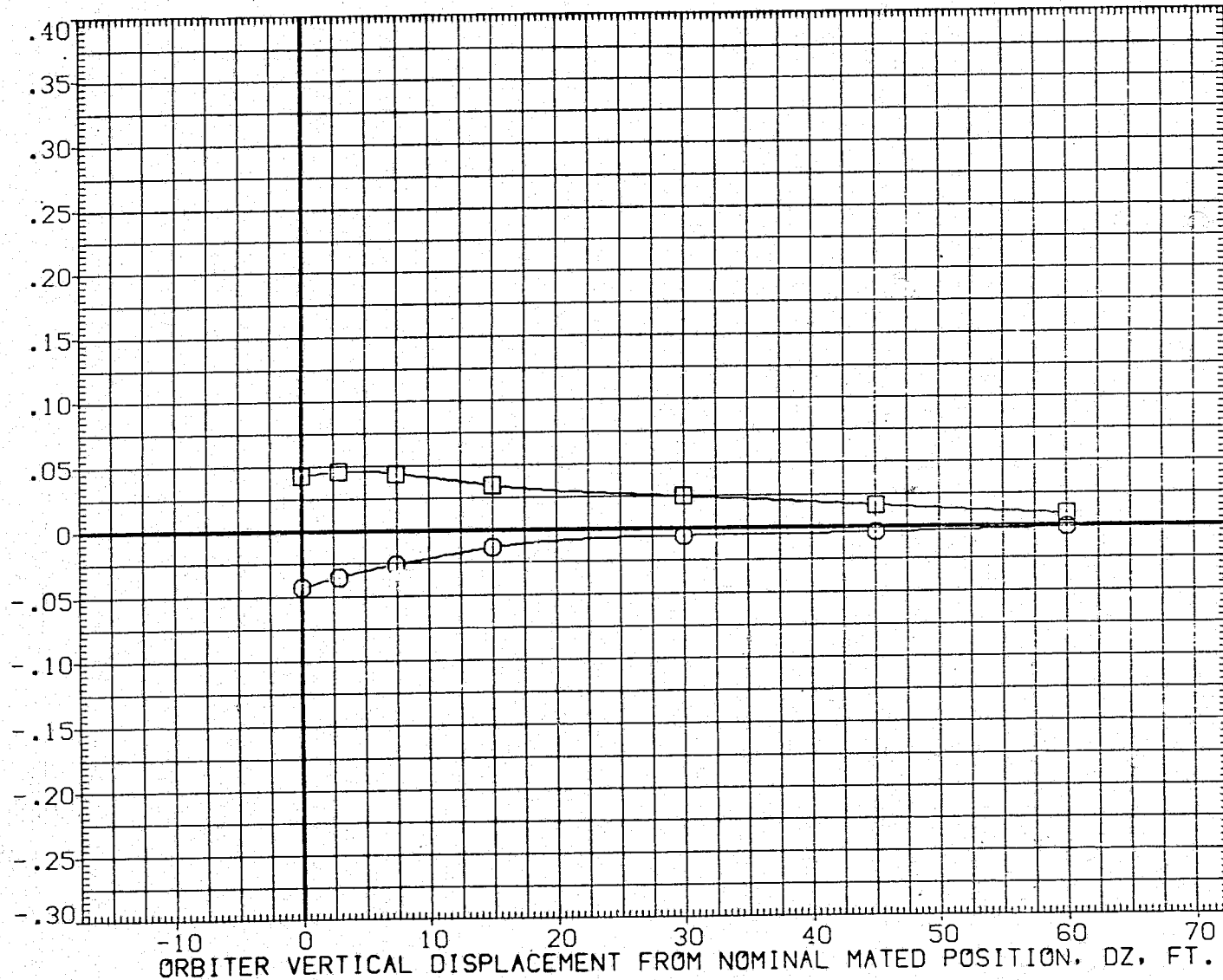


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	8.000	BETAC	-5.000
□	14.000	ELV-1B	ELV-0B	3.000
		ELEVON	MACH	.600
		PHI	DX	.000
		DY	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SC. ST.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1009.9000	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.8000	IN. ZC
SCALE	.0300	

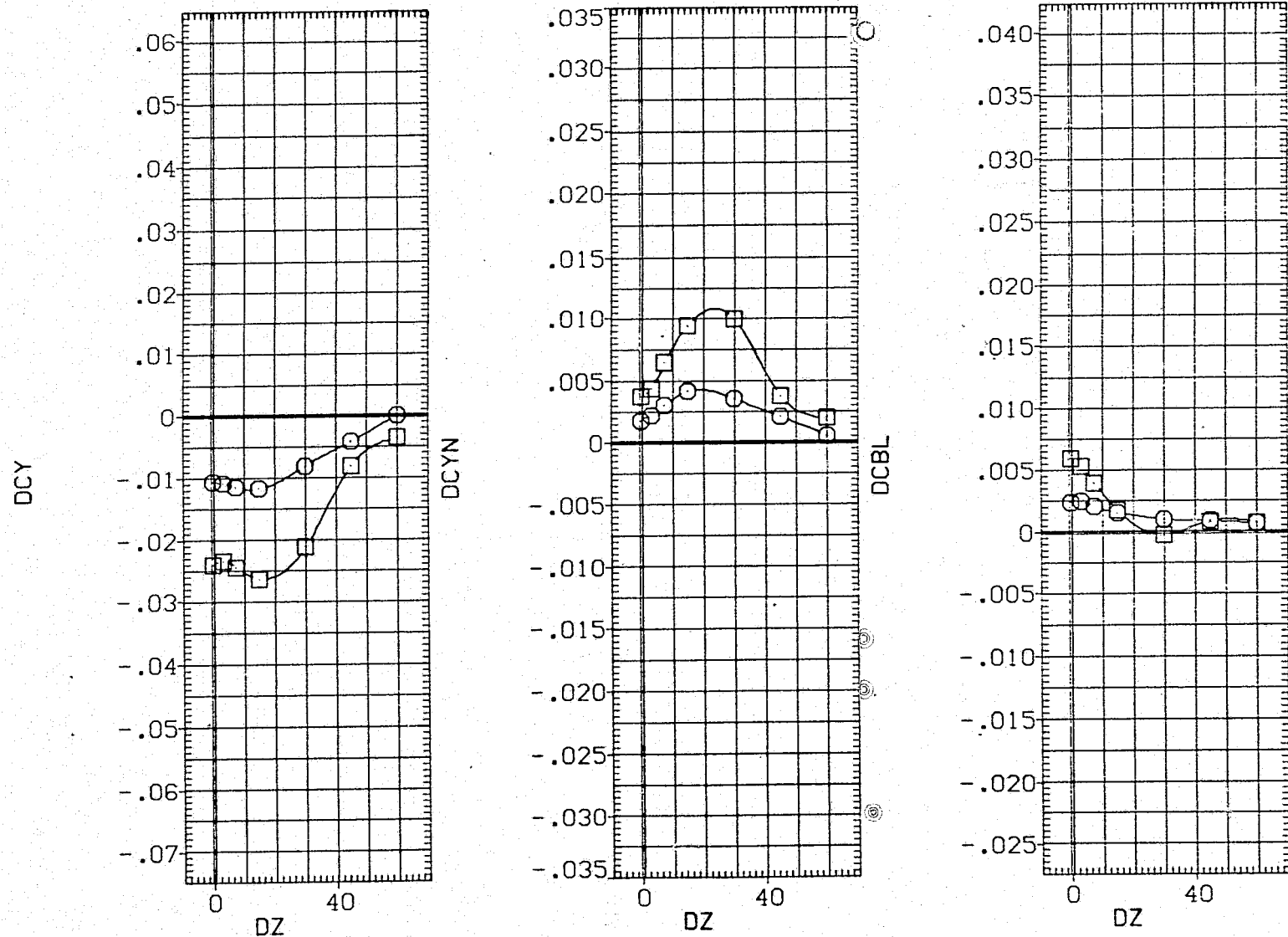


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC -5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX .000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

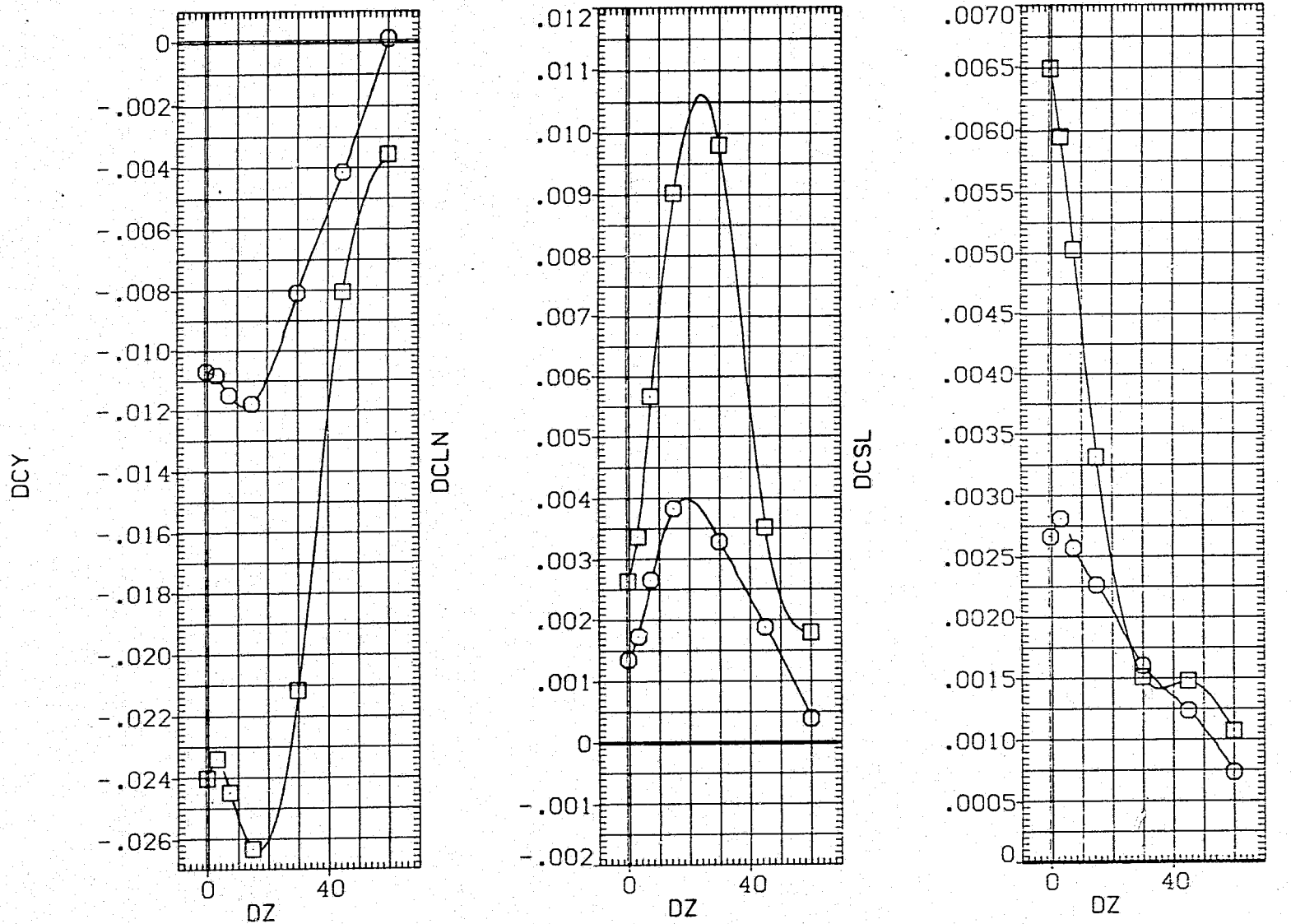


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES		
○	10.000	ELV-IB .000	ELV-OB 3.000	
□	14.000	ELEVON 5.000	MACH .600	
		BETA0 .000	BETAC -5.000	
		PHI 7.500	DY 10.000	
		DX 10.000	ALPHAC 4.000	

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
XMRP	1339.000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8 00	IN.ZC
SCALE	.0300	

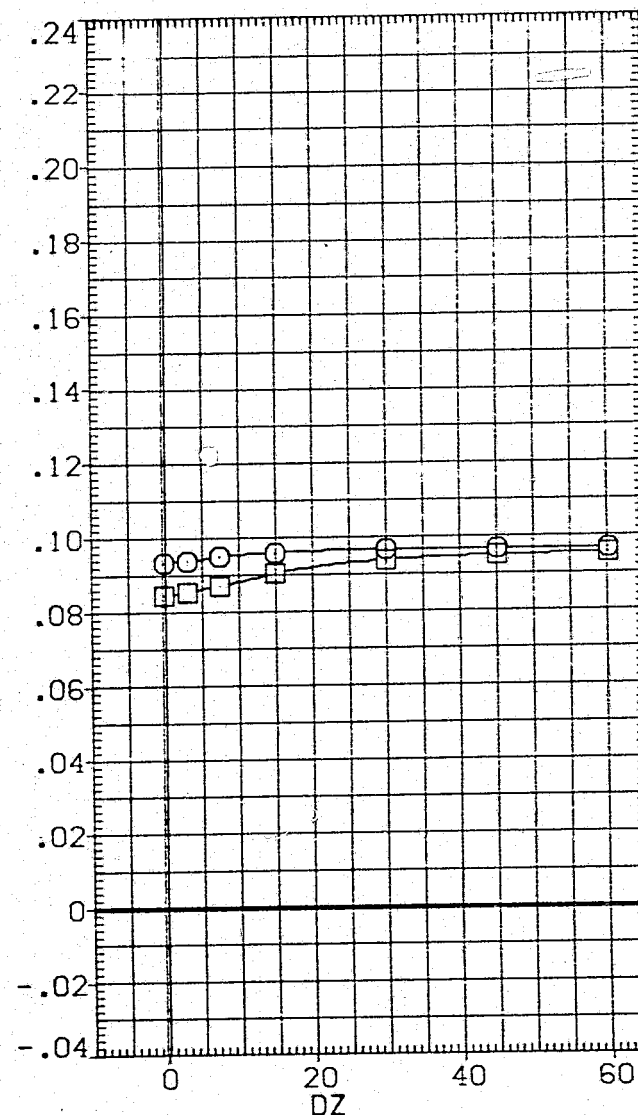
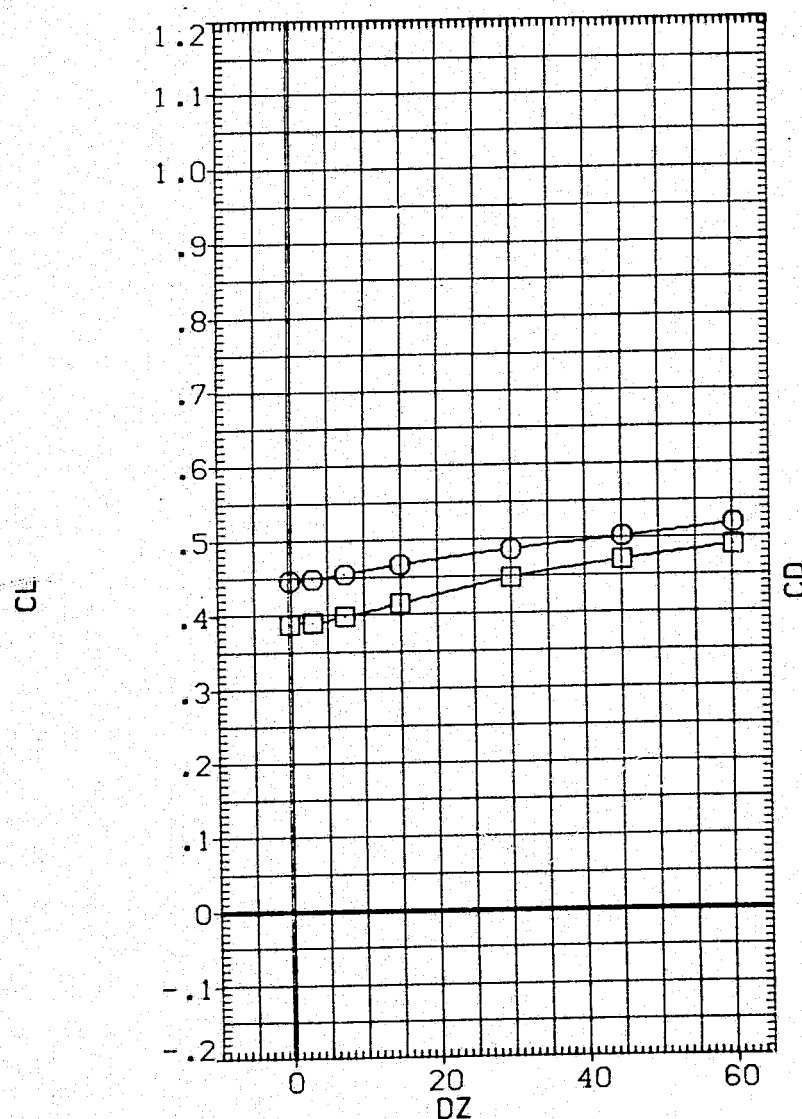


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

ELV-IB

PARAMETRIC VALUES

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

7.500

DY

10.000

DX

10.000

ALPHAC

4.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

PITCHING MOMENT COEFFICIENT, CLM

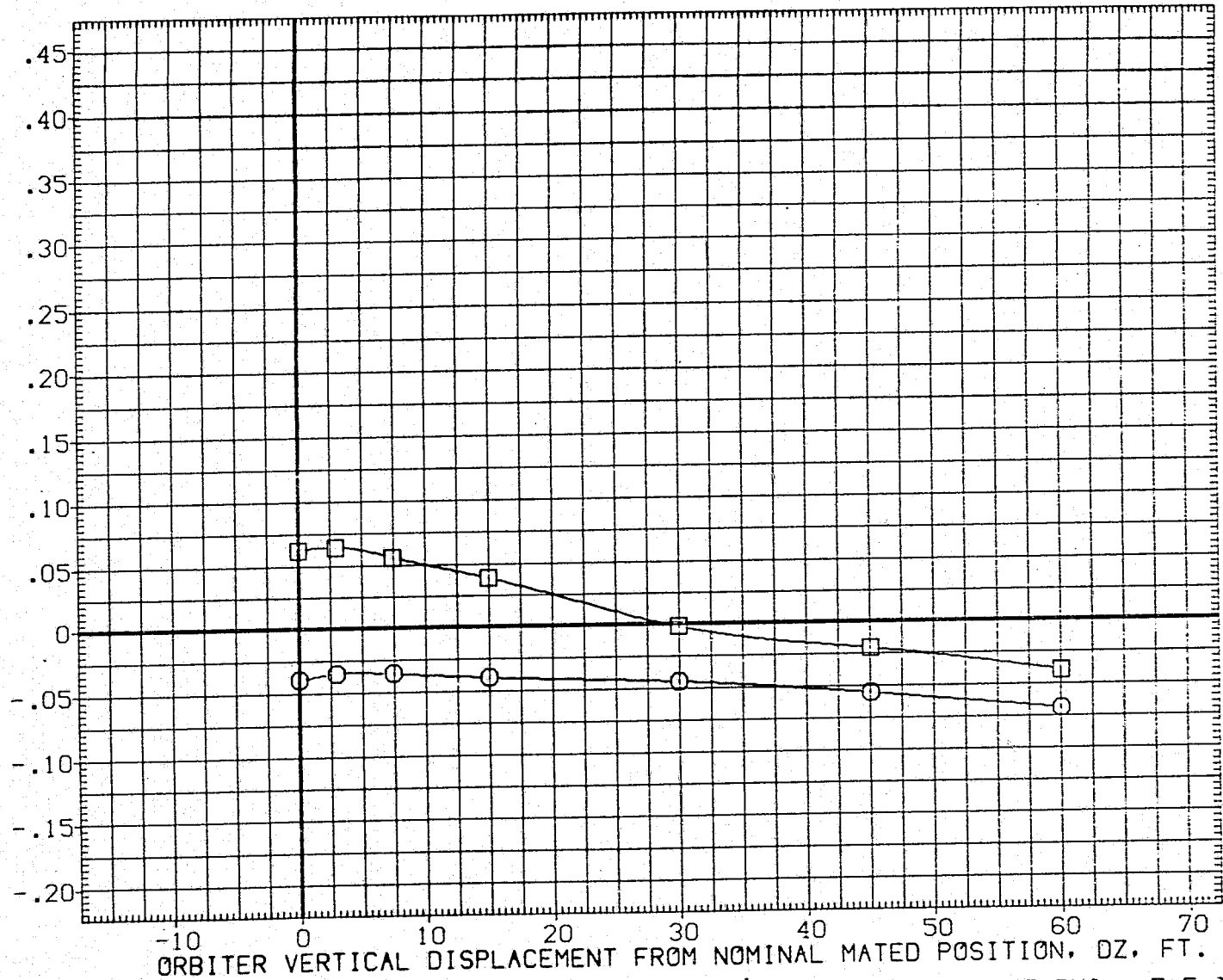


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ELV-1B .000	ELV-0B 3.000
□	14.000	ELEVON 5.000	MACH 5.600
		BETA0 .000	BETAC -5.000
		PHI 7.500	DY 10.000
		DX 10.000	ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.9000	IN.ZC
SCALE	.0300	

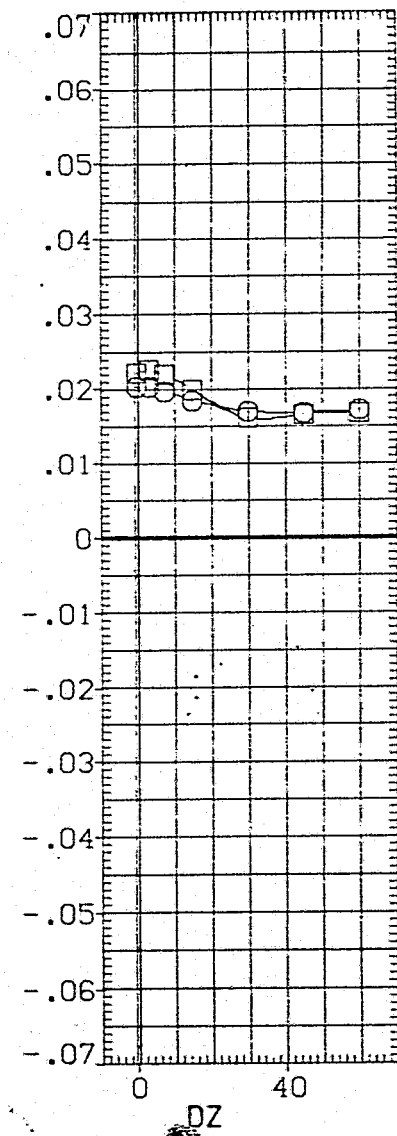
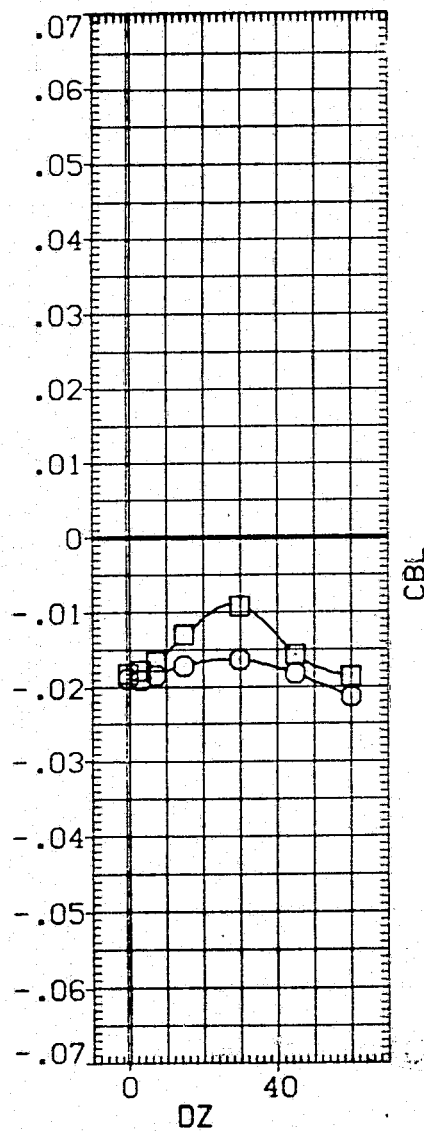
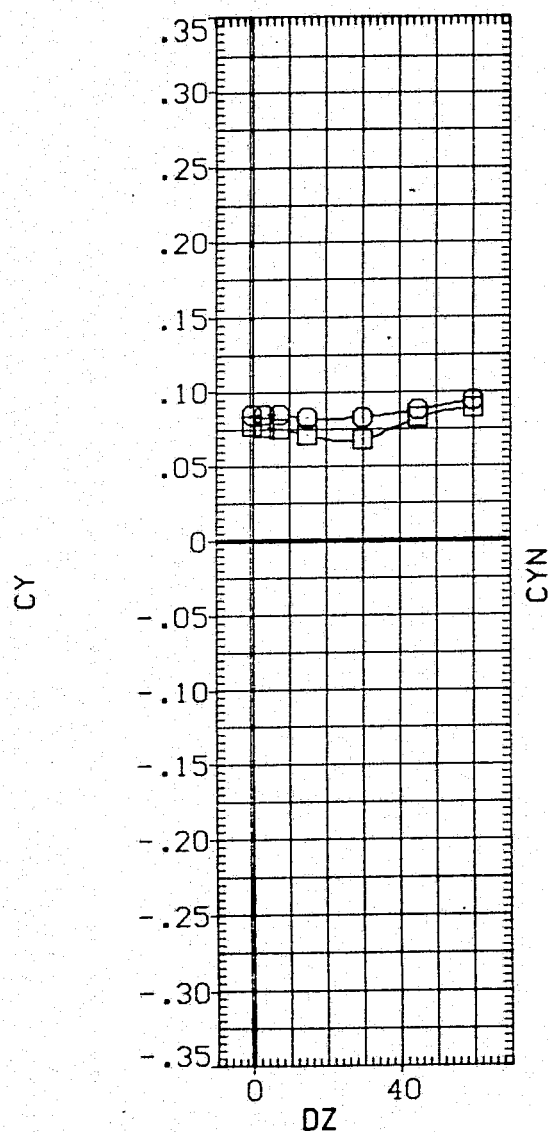


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA(MGN081)

SYMBOL

○
□

ALPHA0

10.000

ELV-IB

PARAMETRIC VALUES

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

7.500

DY

10.000

DX

10.000

ALPHAC

4.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

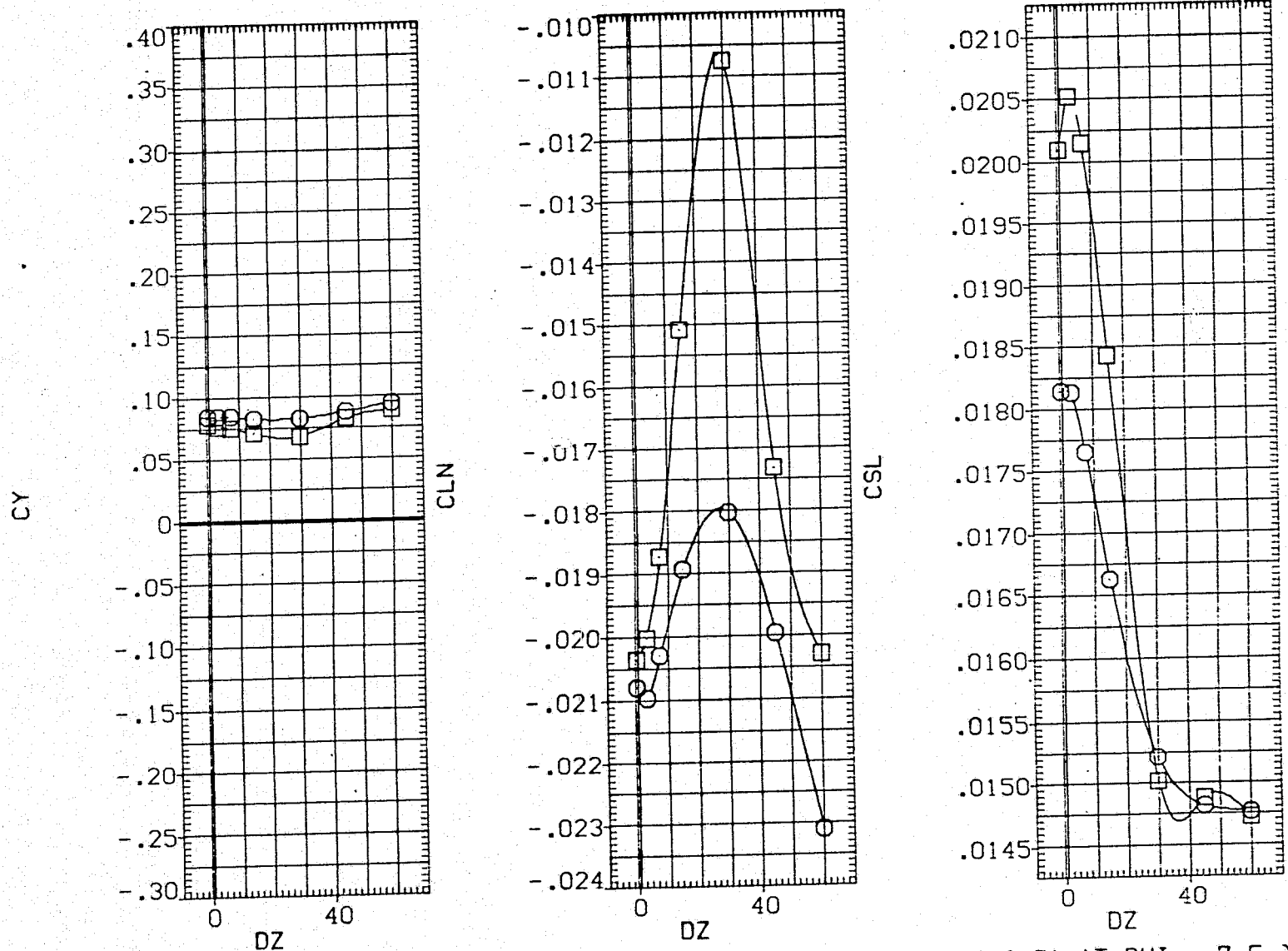


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

BETAC

-5.000

ELV-OB

3.000

MACH

.600

DX

10.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000

50.FT.

LREF 327.7800

N.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .000

IN.YC

ZMRP 190.3000

IN.ZC

SCALE .0300

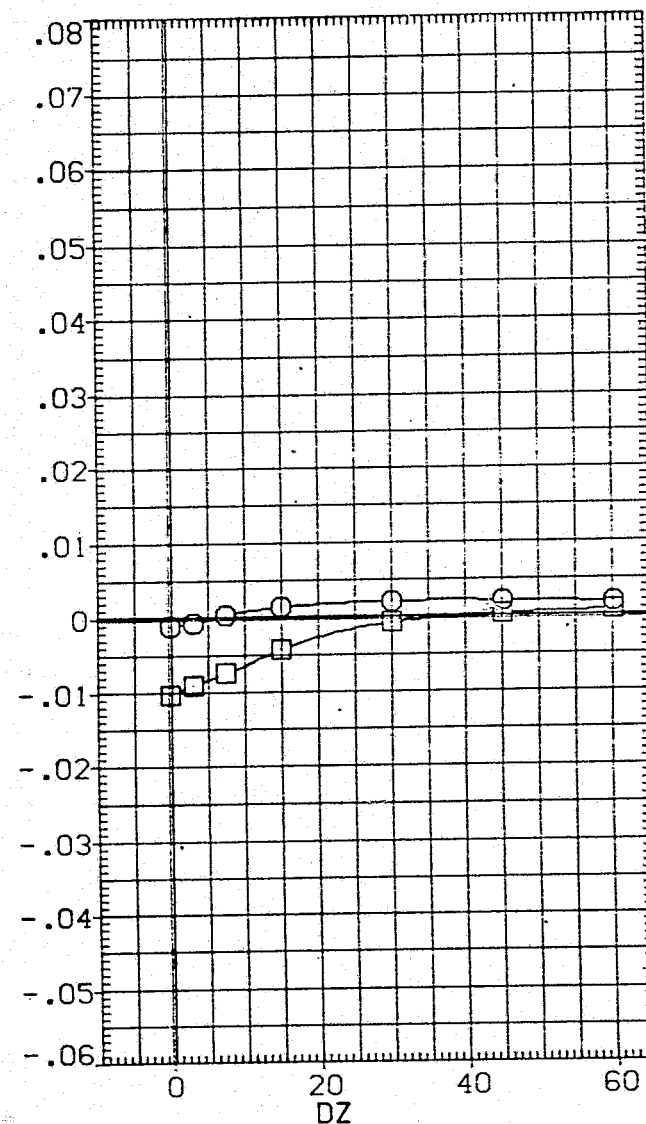
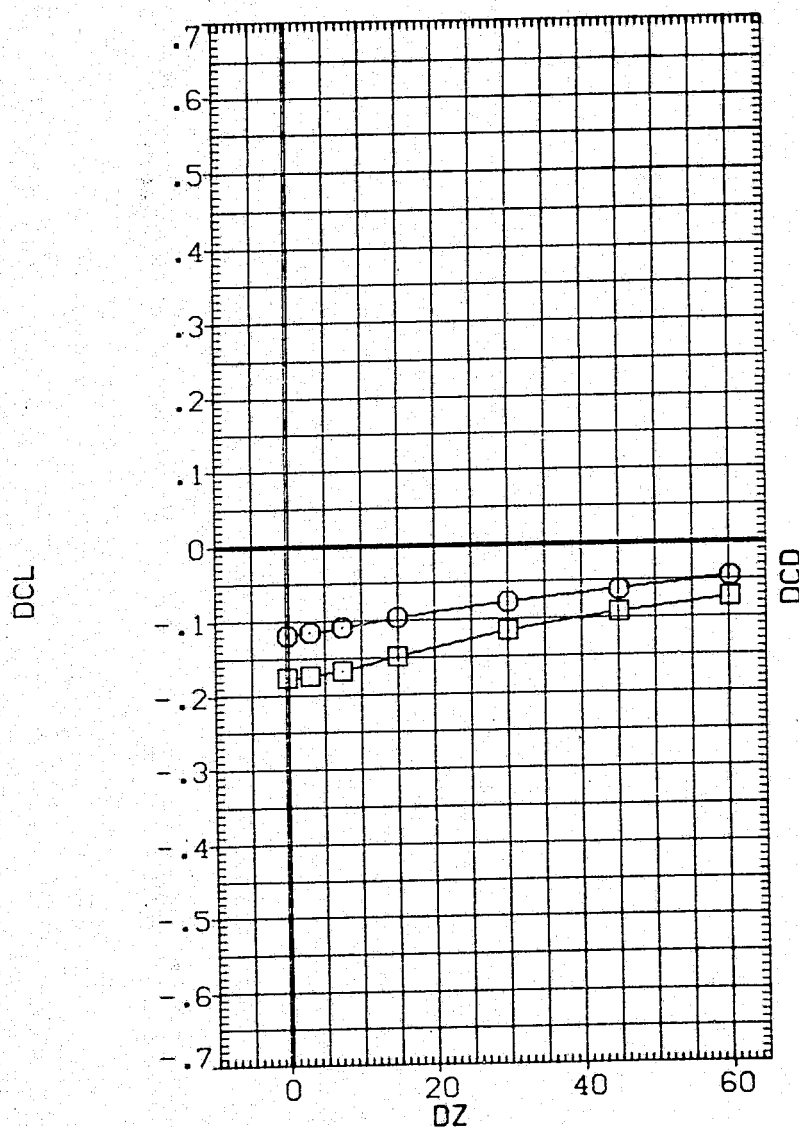


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

-5.000

ELV-IB

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

PHI

7.500

DX

10.000

DY

10.000

BETA0

.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

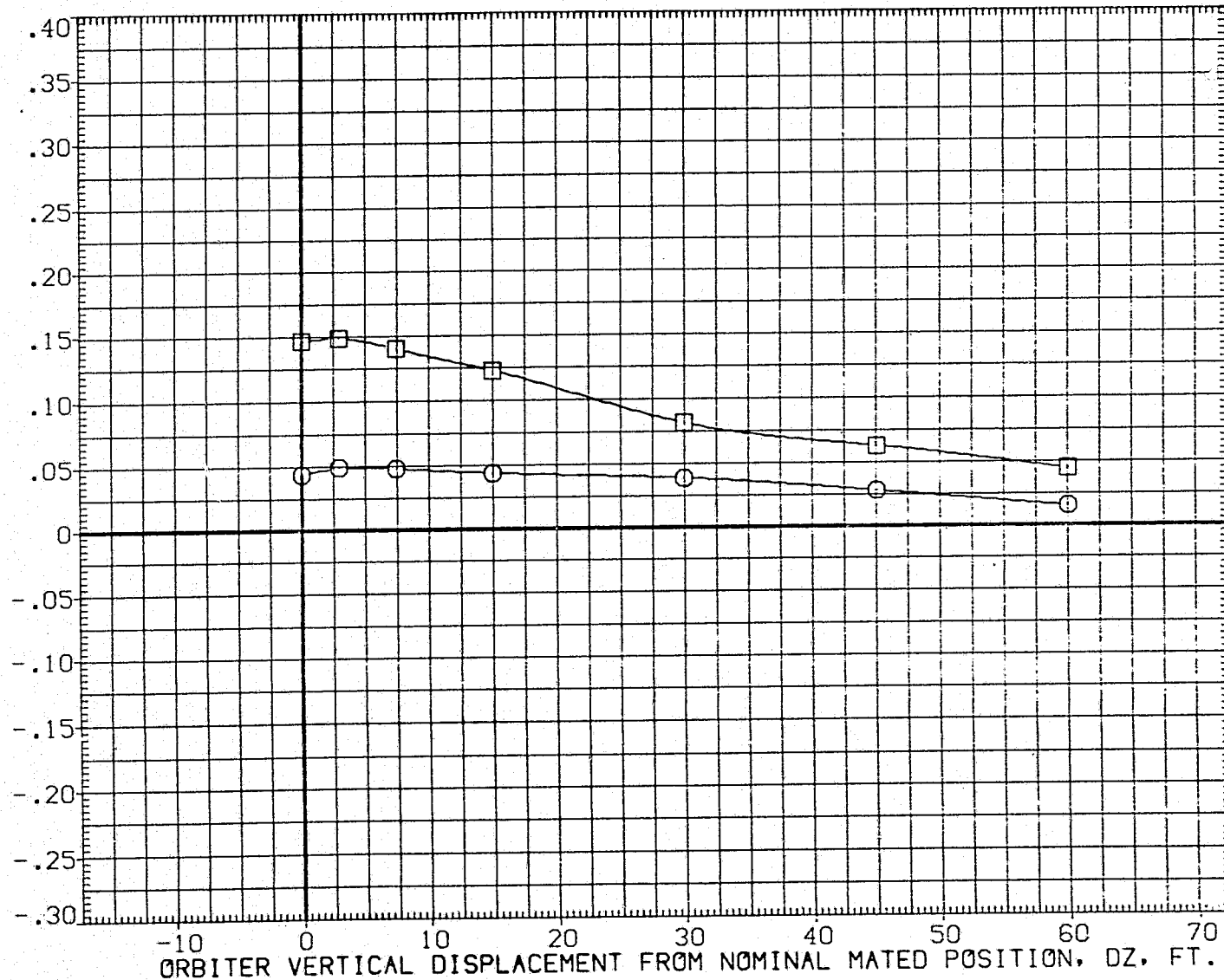


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHAD	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC -5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX 10.000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1333.8000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

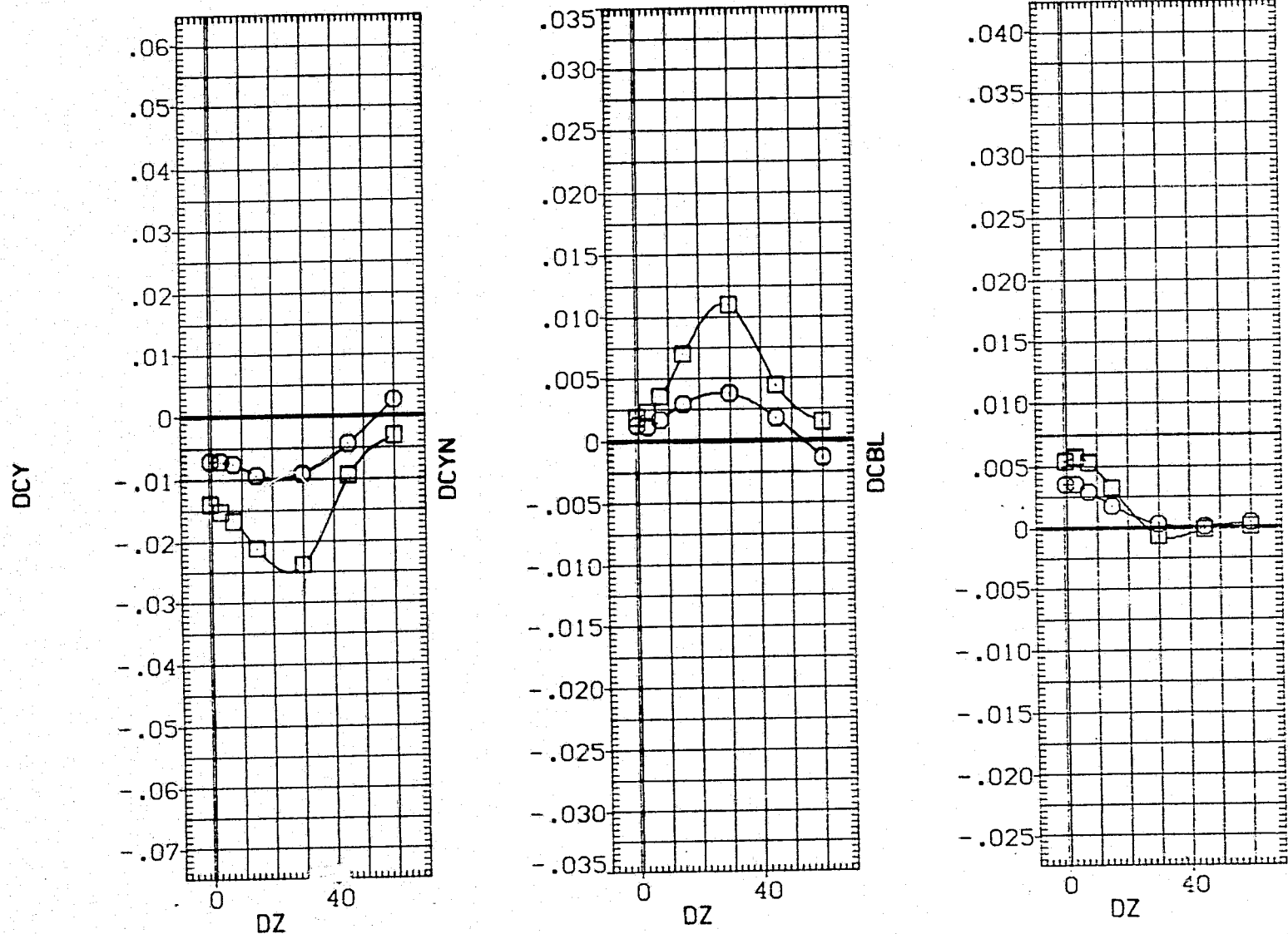


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC -5.000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX 10.000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

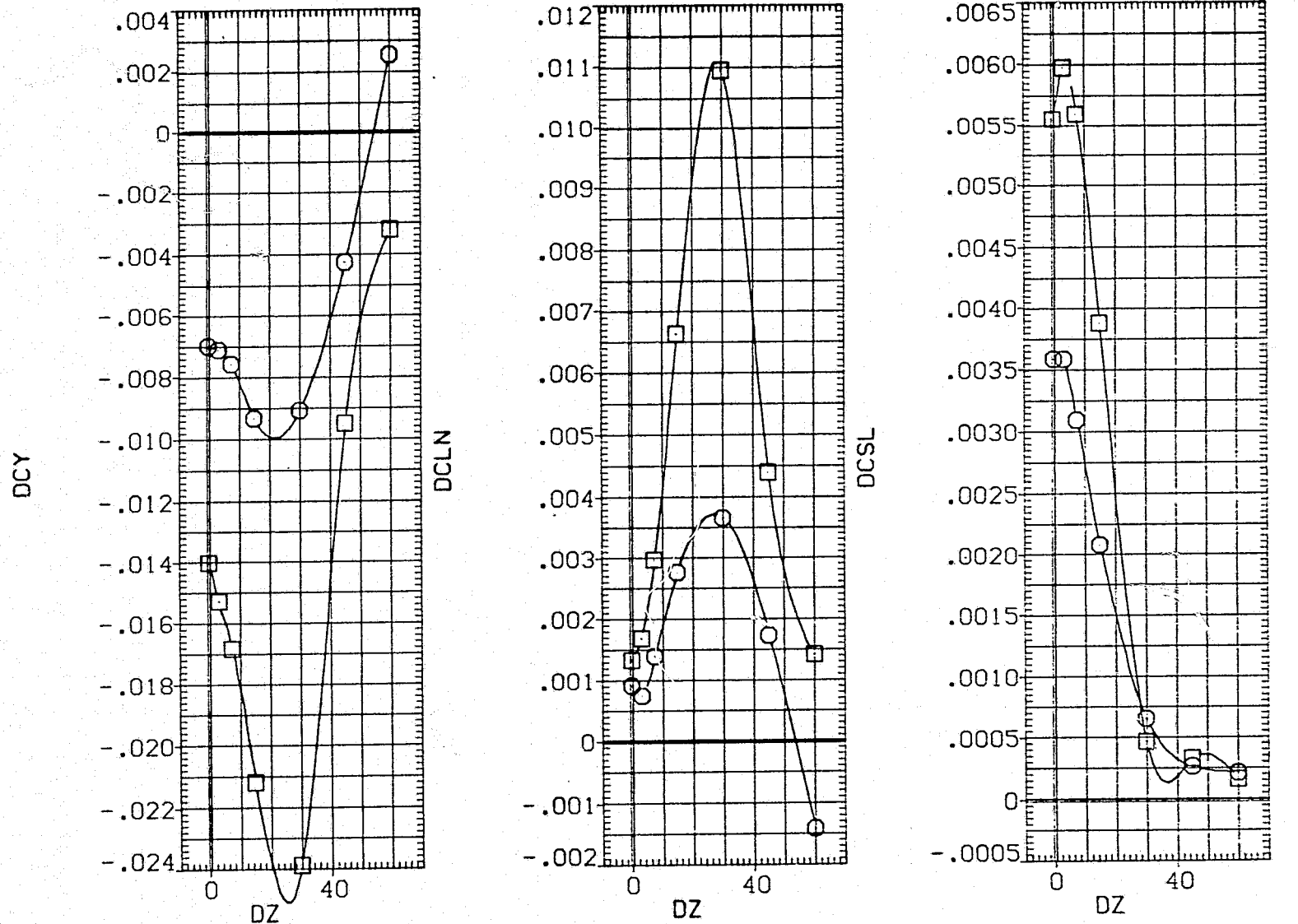


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGND03)

SYMBOL



ALPHA0

10.000

ELV-18

PARAMETRIC VALUES

.000

ELV-08

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

7.500

DY

10.000

DX

10.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF

5500.0000

50.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

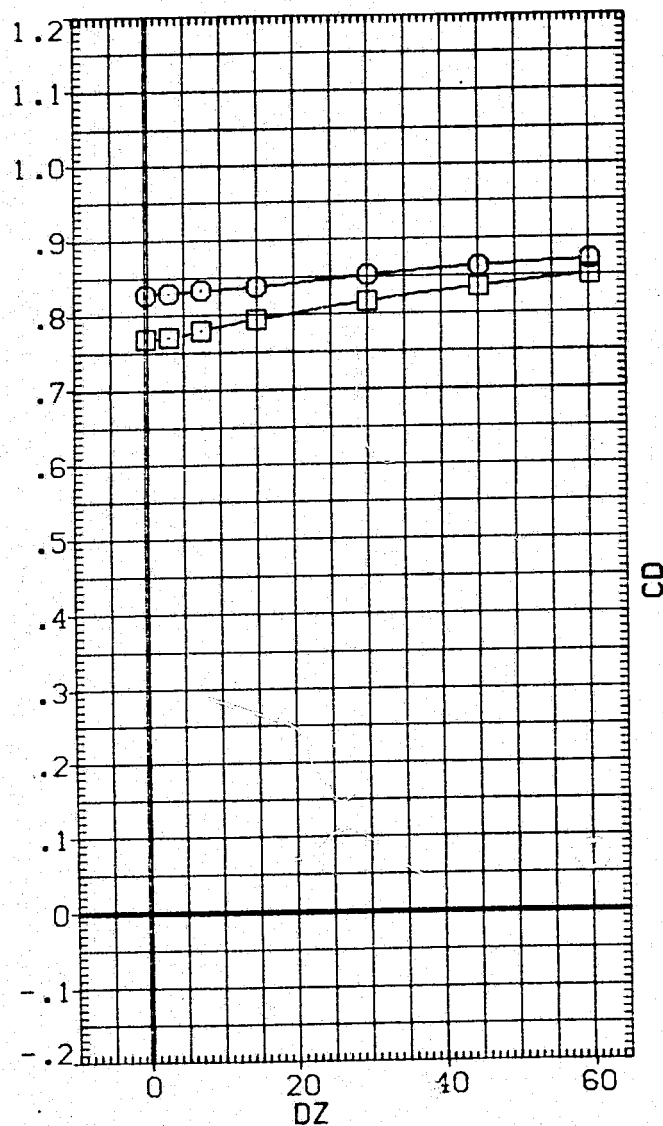
190.8000

IN.ZC

SCALE

.0300

CL



CD

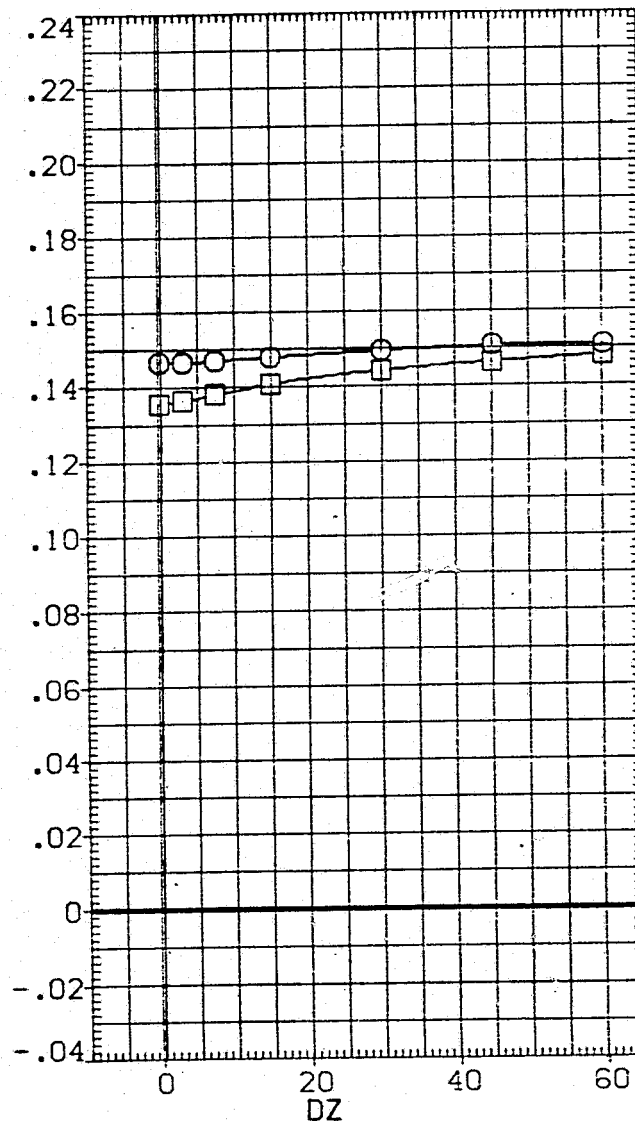


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

ELV-IB

PARAMETRIC VALUES

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

7.500

DY

10.000

DX

10.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

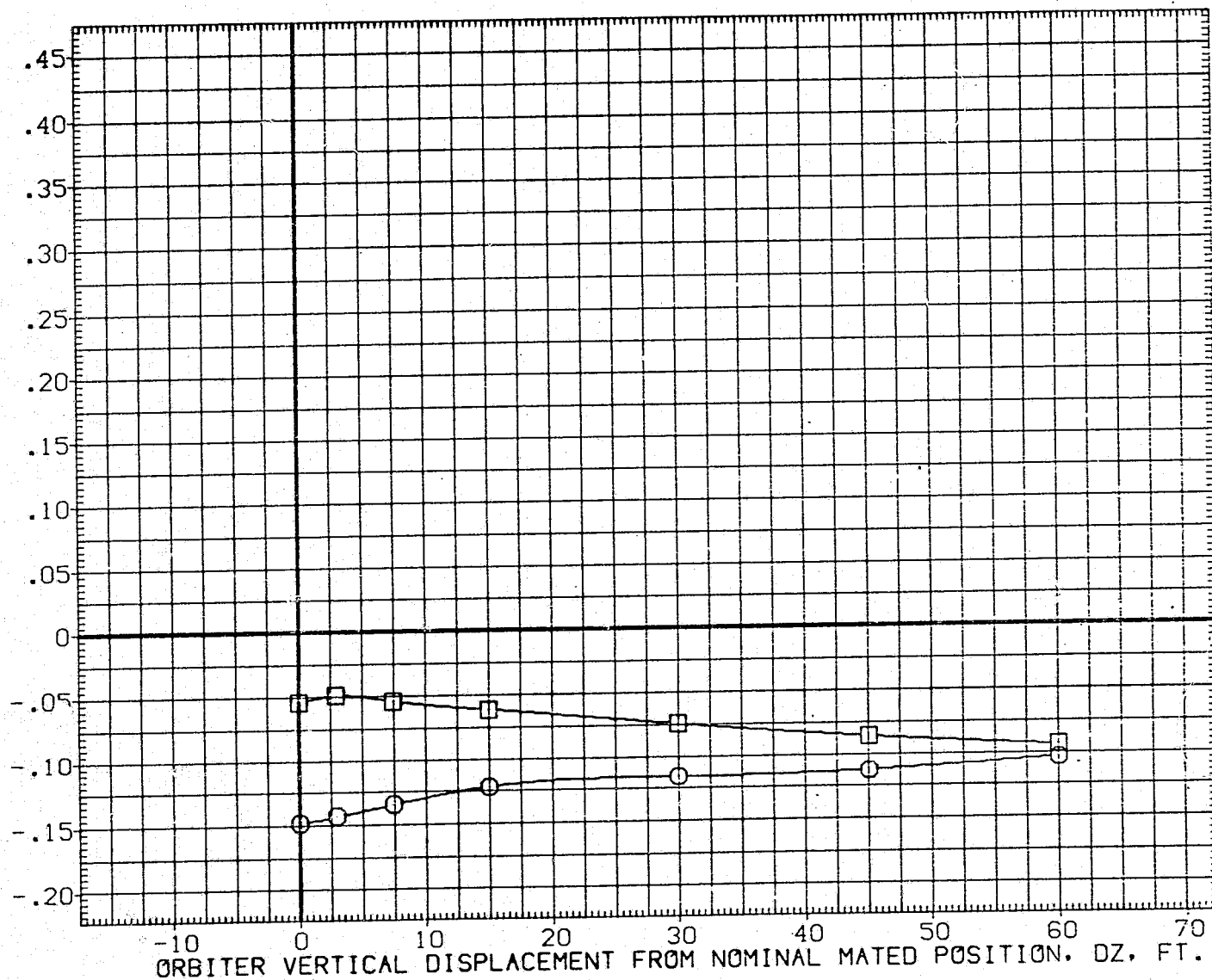


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHAD

10.000

ELV-1B

14.000

PARAMETRIC VALUES

.000

ELV-0B

3.000

5.000

MACH

.600

BETA0

.000

BETAC

-5.000

PHI

7.500

DY

10.000

DX

10.000

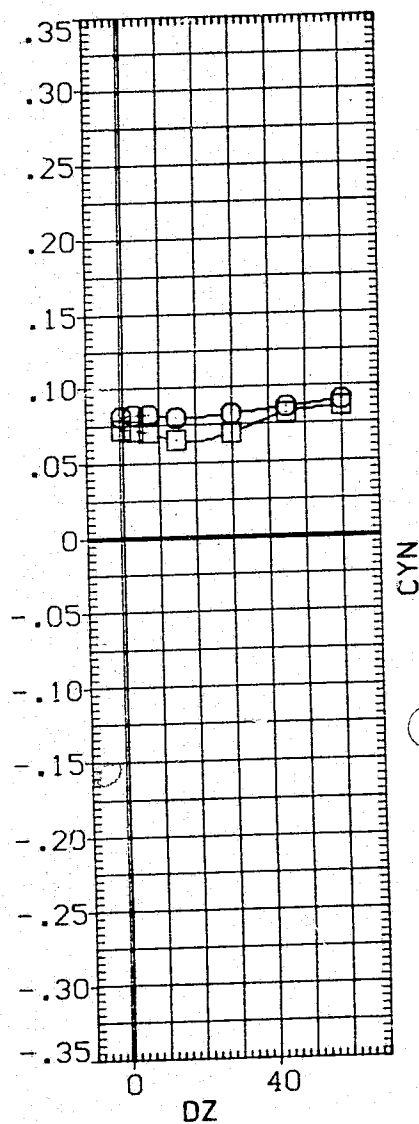
ALPHAC

8.000

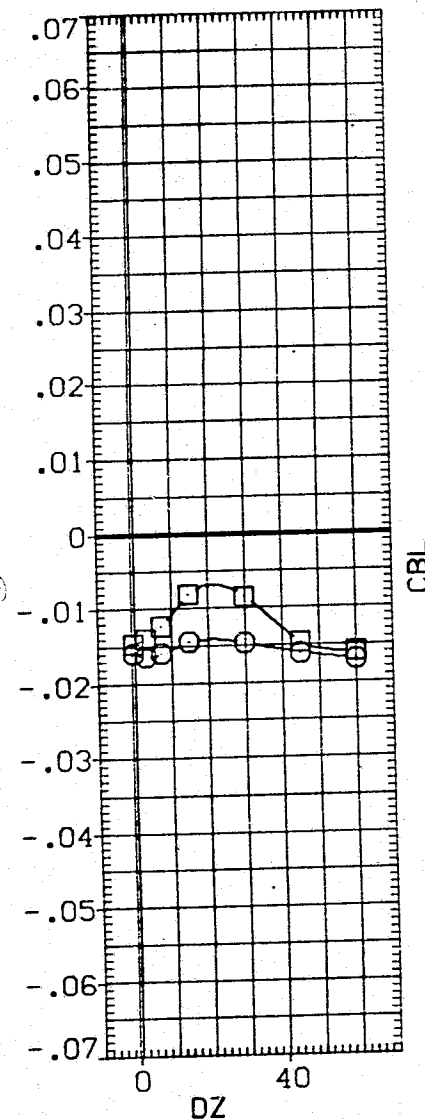
REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

CY



CYN



CBL

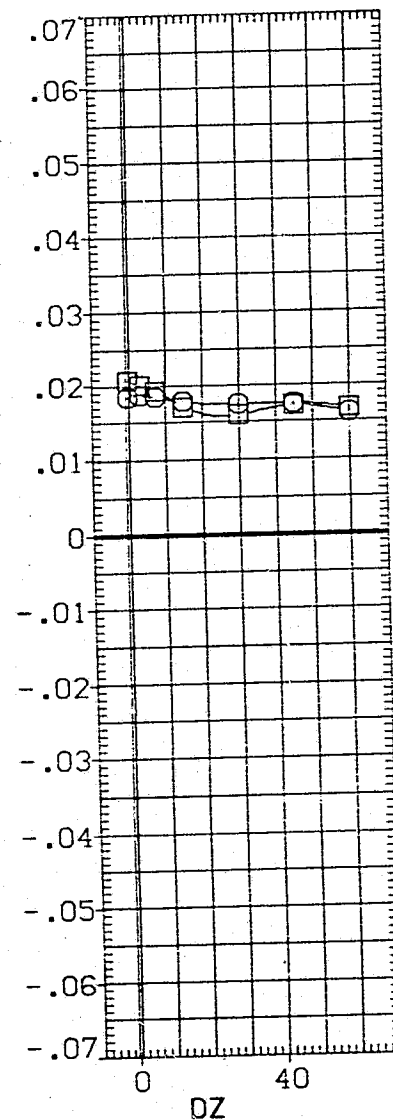


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGN083)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	.000	MACH	3.000
□	14.000	5.000	BETAC	.600
		.000	DY	-5.000
		7.500	ALPHAC	10.000
		10.000		8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

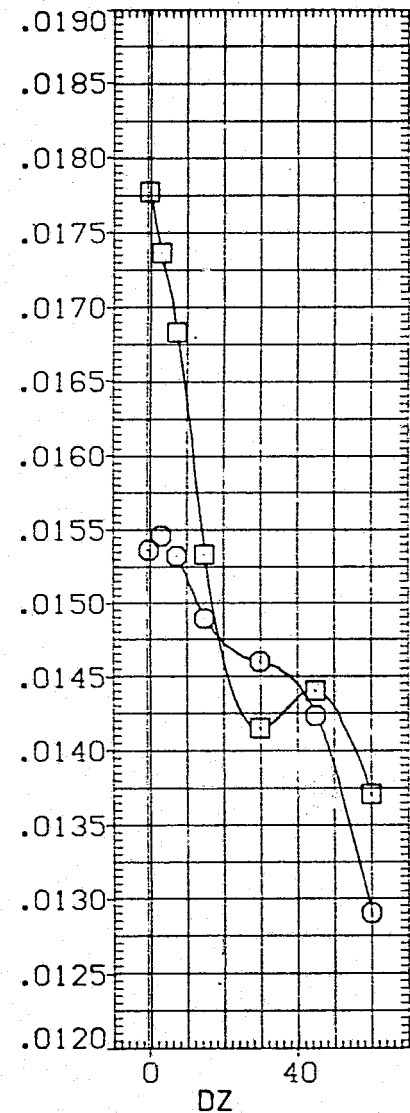
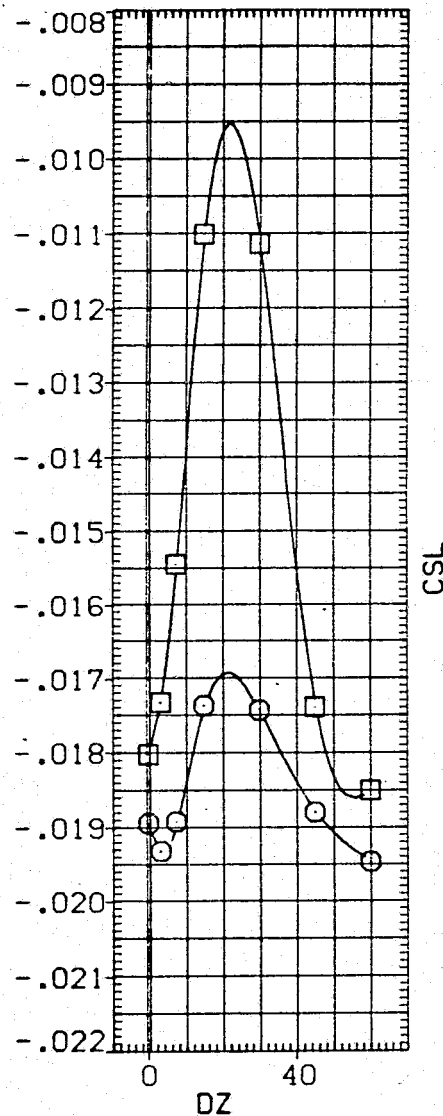
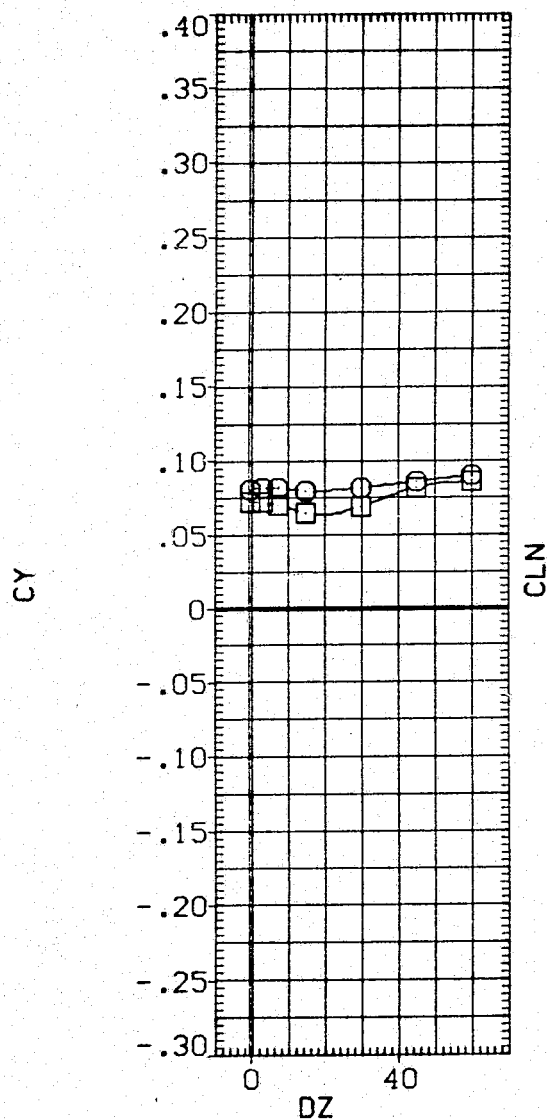


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC	
○	10.000	ELV-IB	8.000	-5.000	
□	14.000	ELEVON	.000	ELV-OB	3.000
		PHI	5.000	MACH	.600
		DY	7.500	DX	10.000
			10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

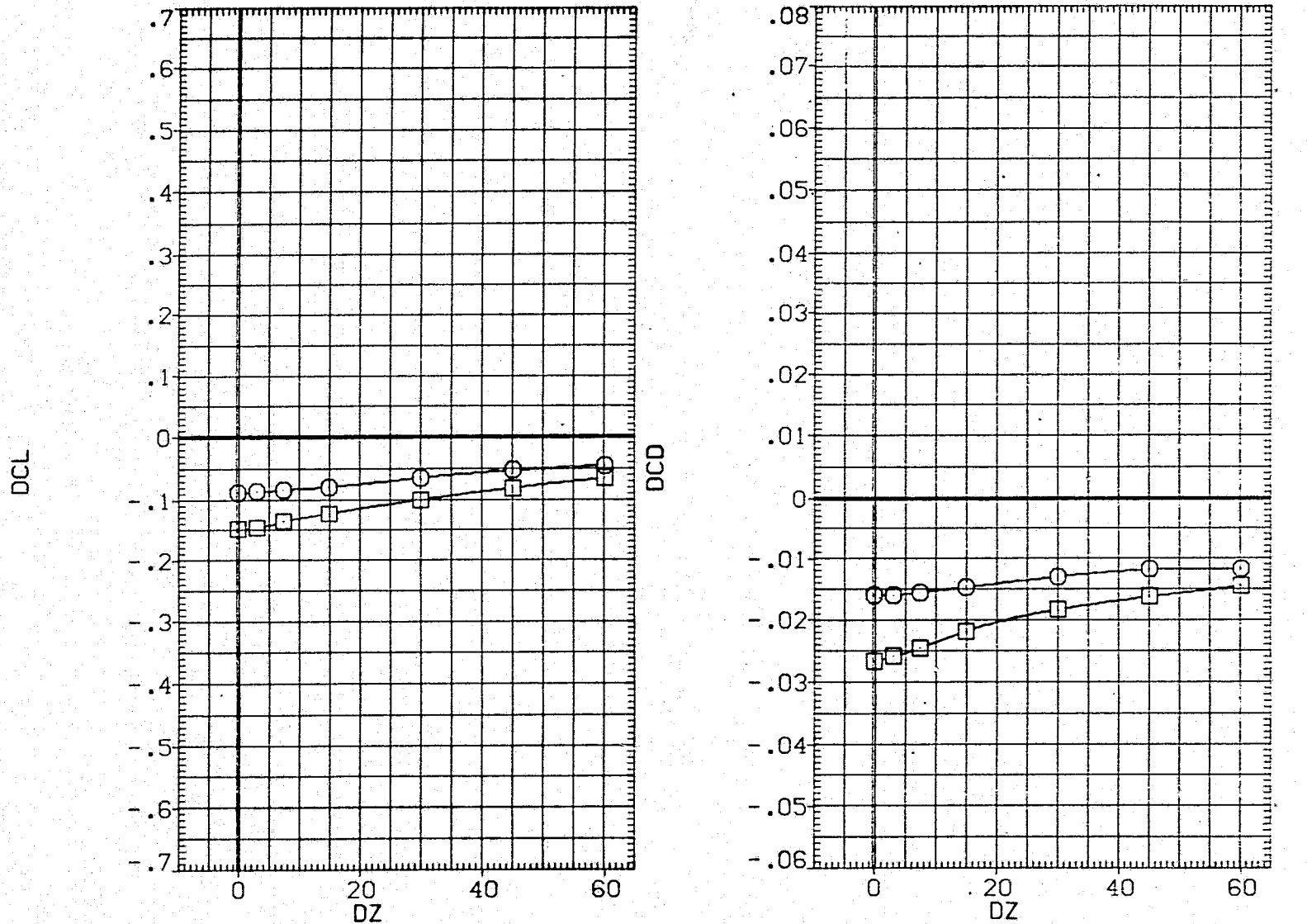


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

7.500

10.000

BETAC

ELV-0B

MACH

DX

BETA0

-5.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

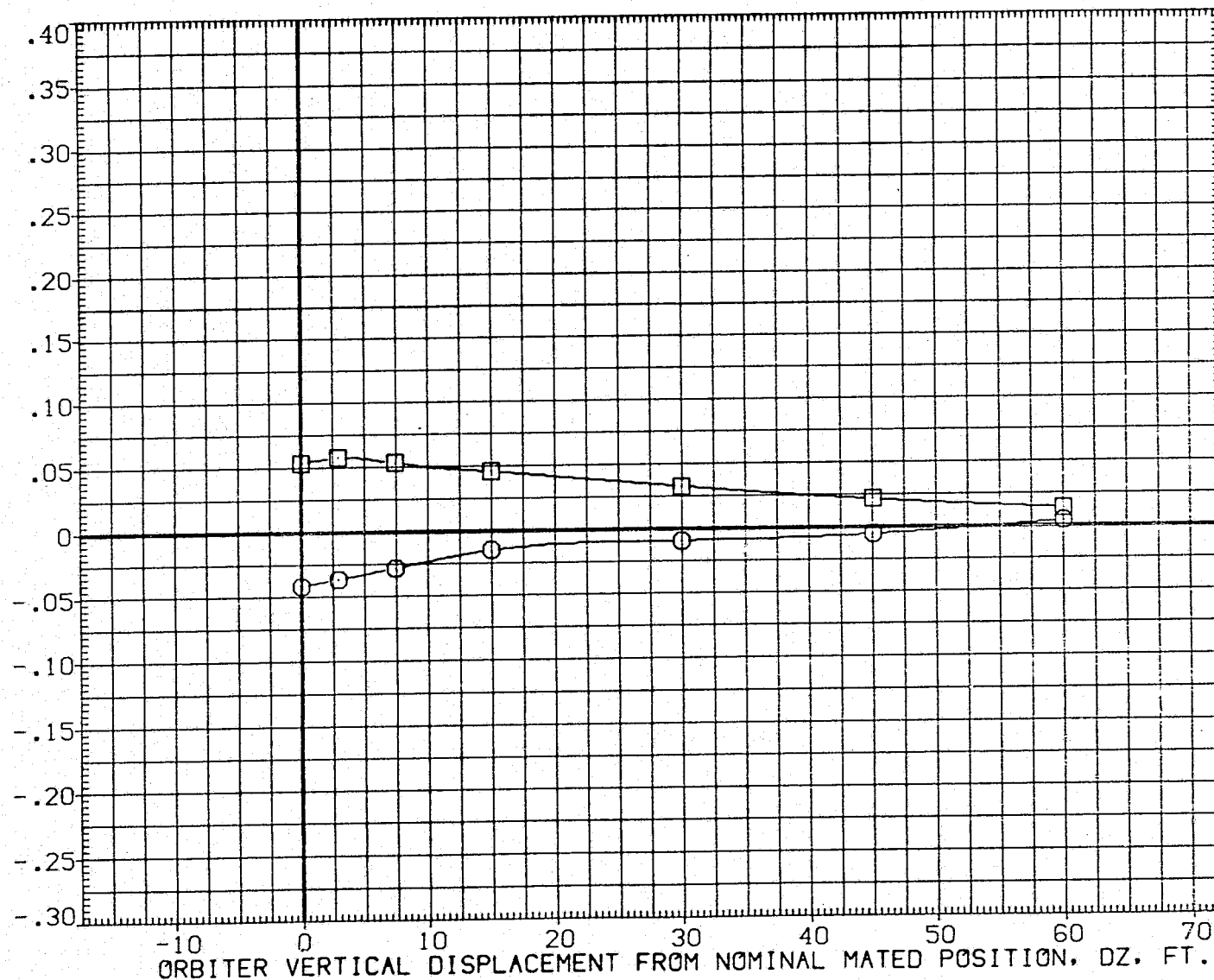


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	
○	10.000	8.000	BETAC	-5.000
□	14.000	.000	ELV-0B	3.000
		5.000	MACH	.600
		7.500	DX	10.000
		10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

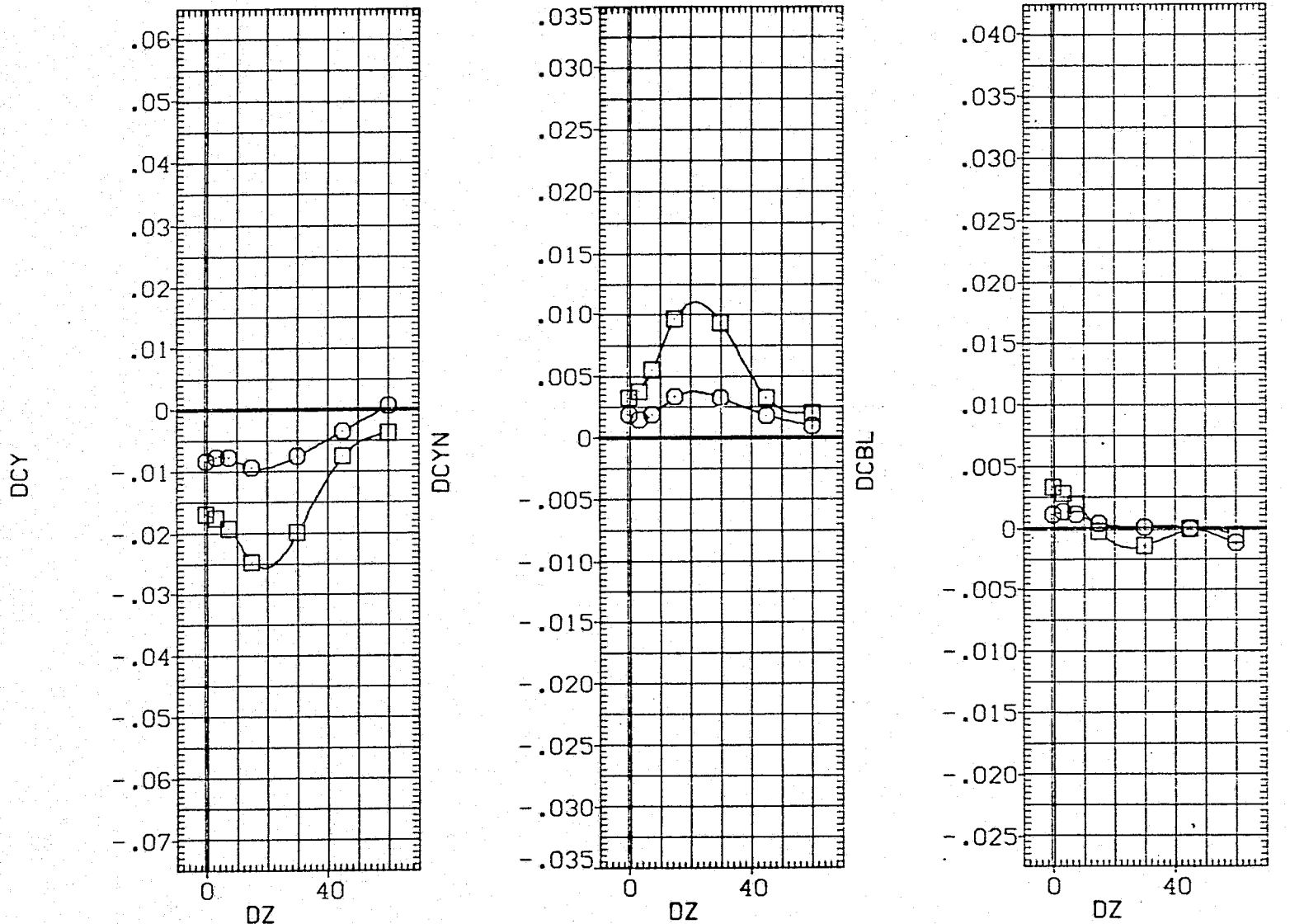


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	
○	10.000	8.000	BETAC	-5.000
□	14.000	.000	ELV-OB	3.000
		5.000	MACH	.600
		7.500	DX	10.000
		10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

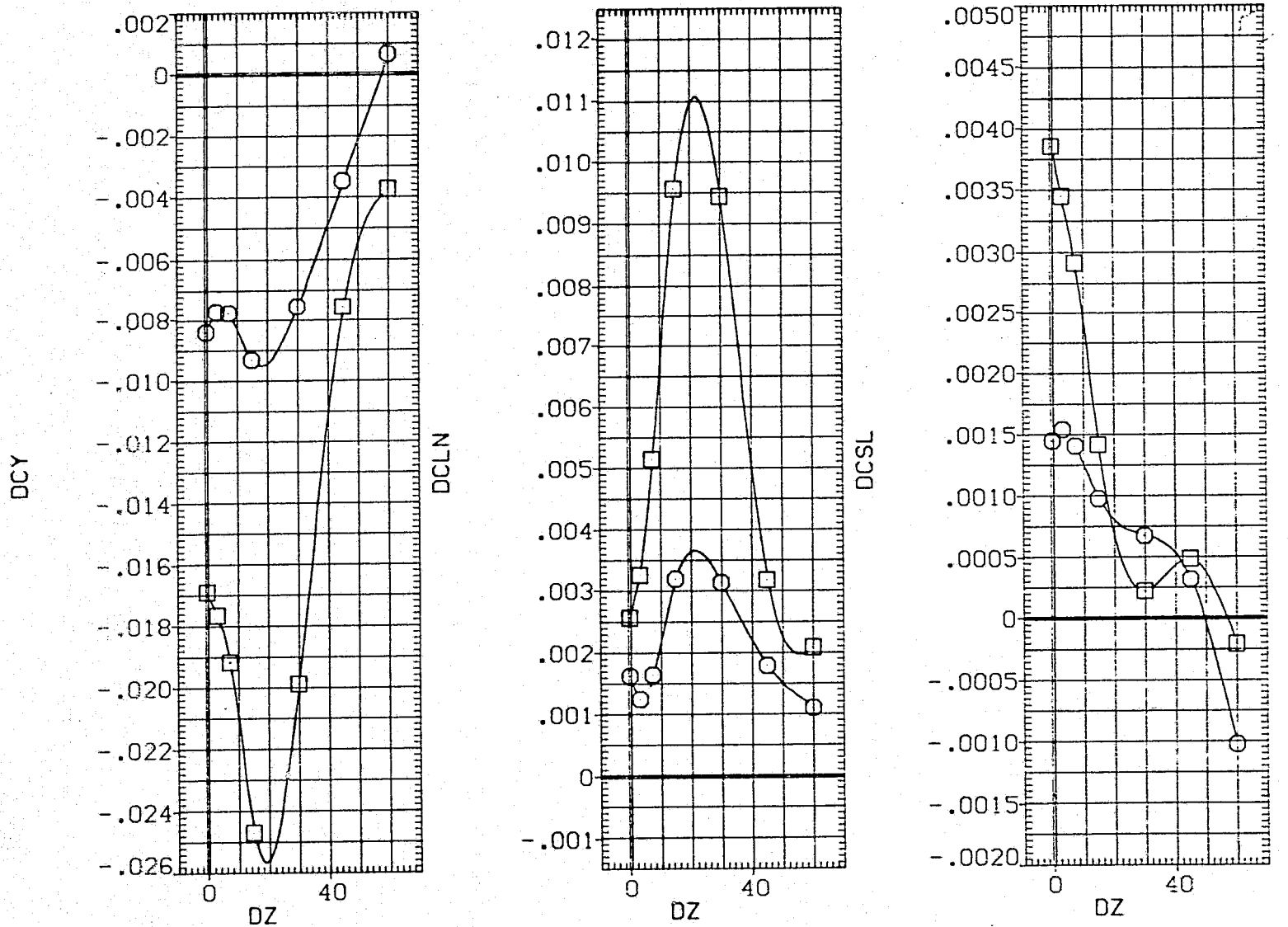


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.7800	IN.
BREF	2348.2400	IN.
XMRP	1339.8000	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.8000	IN. ZC
SCALE	.0300	

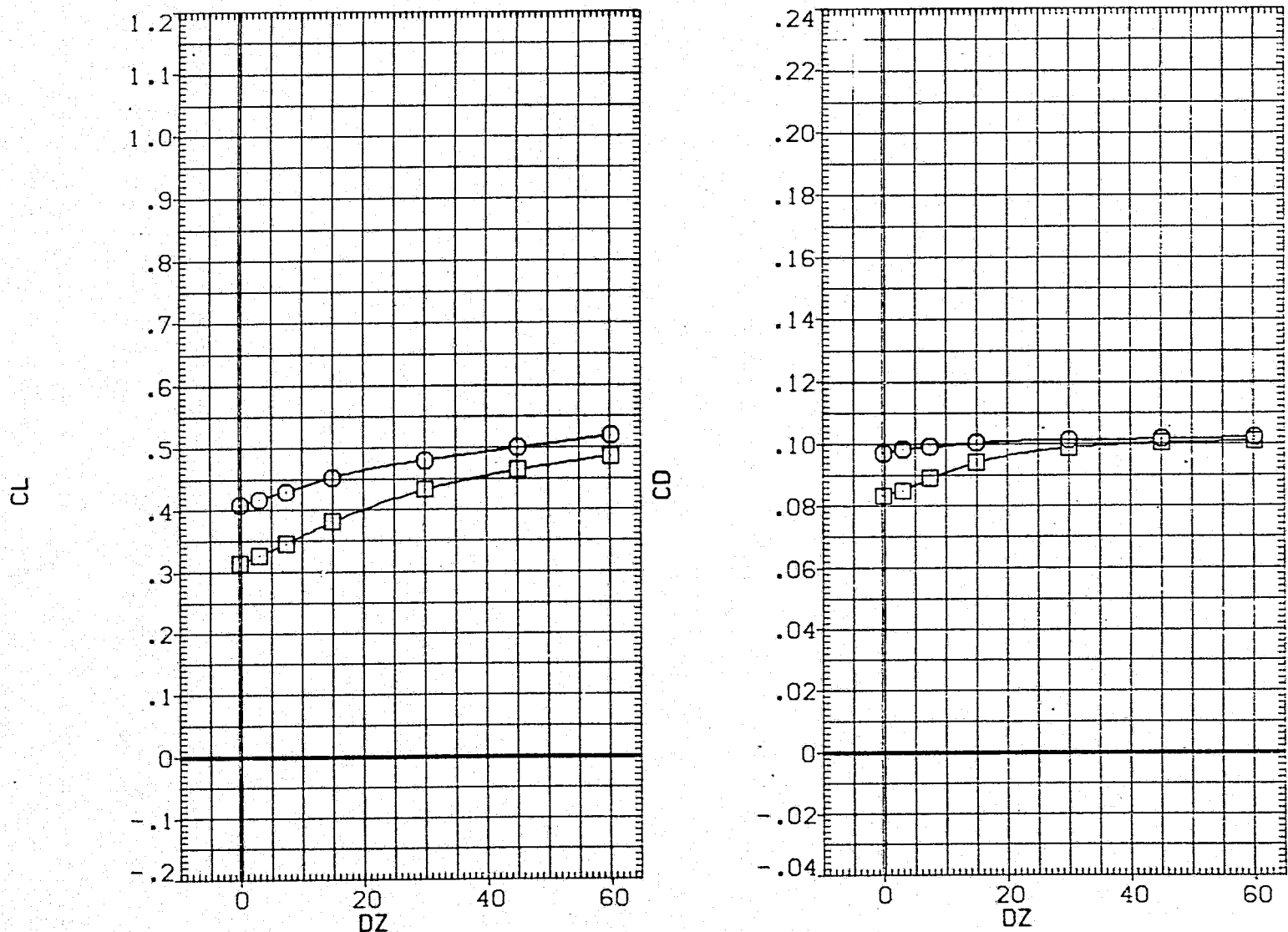


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.8000	IN. ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

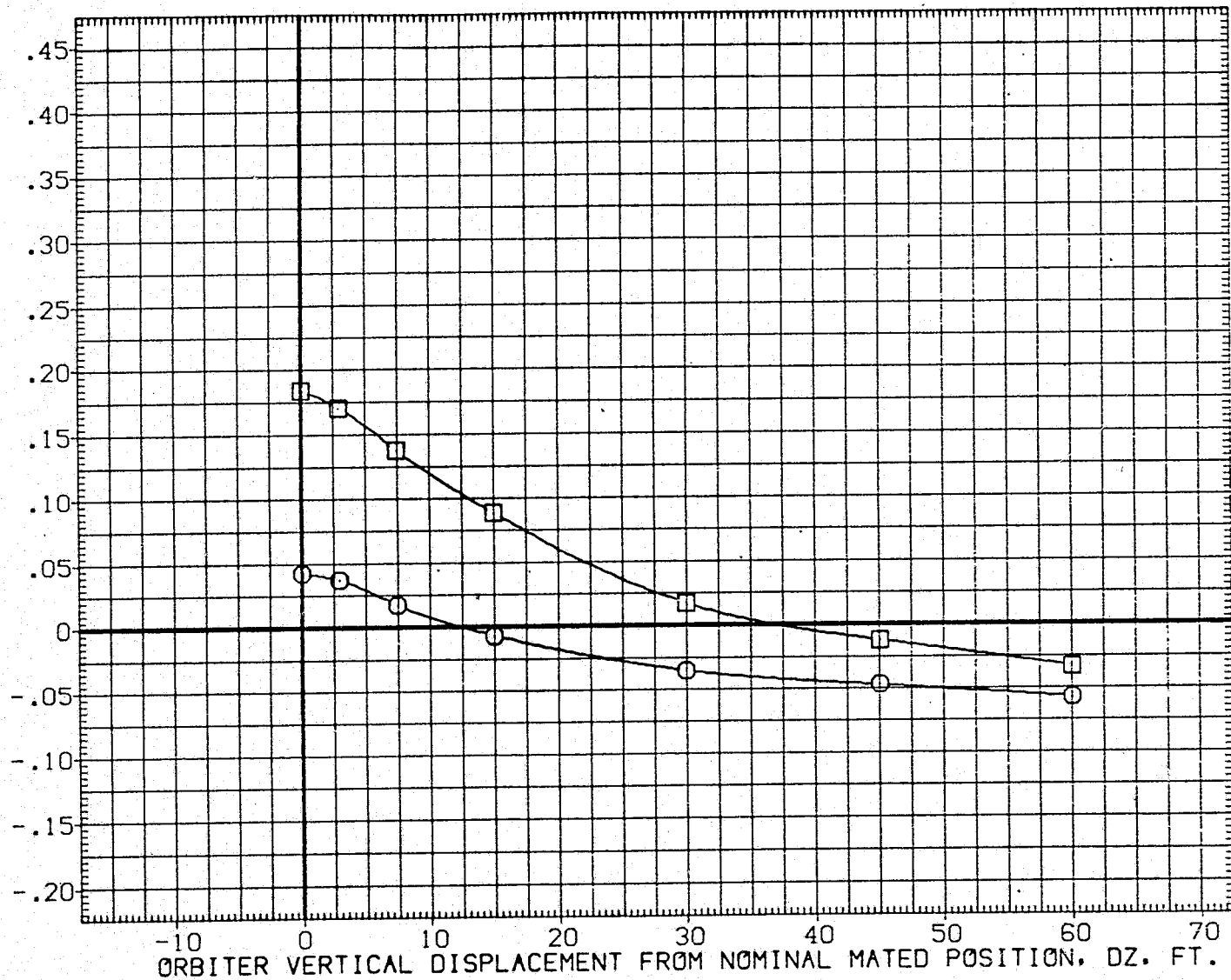


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MONOL 4)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000		3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	19.8000	IN.ZC
SCALE	.0300	

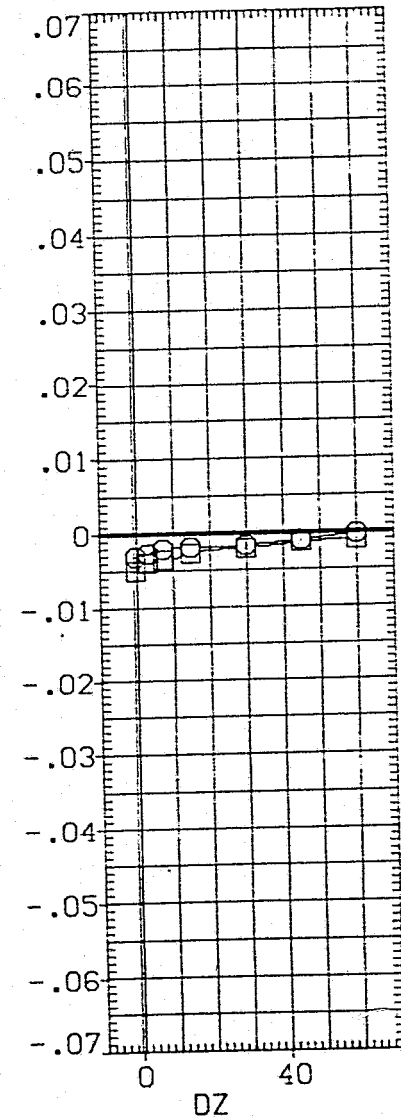
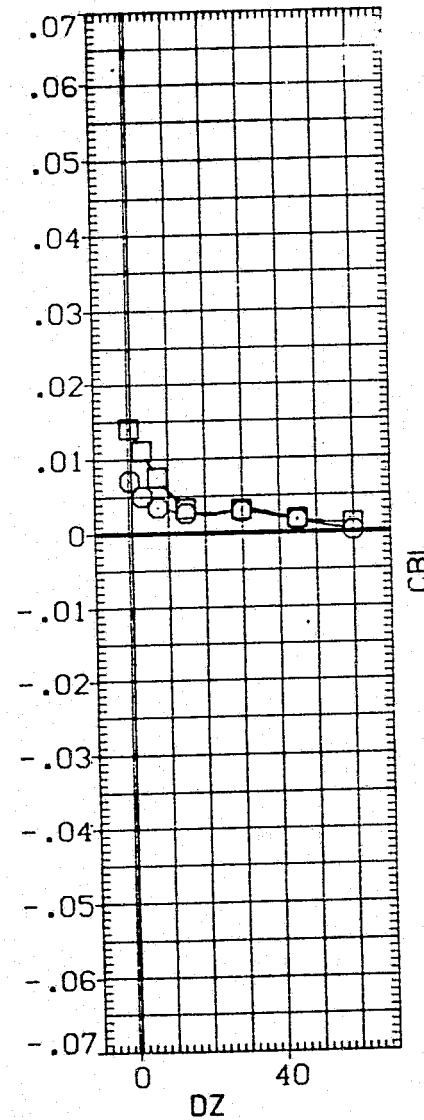
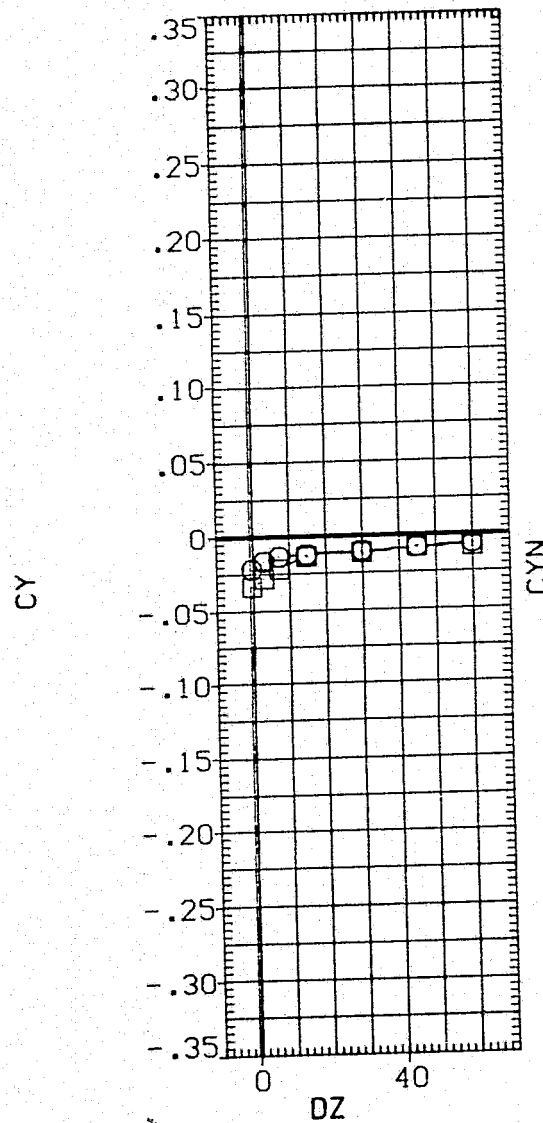


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	DY	.000
		DX	7.500	ALPHAC	.000
			.000		4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

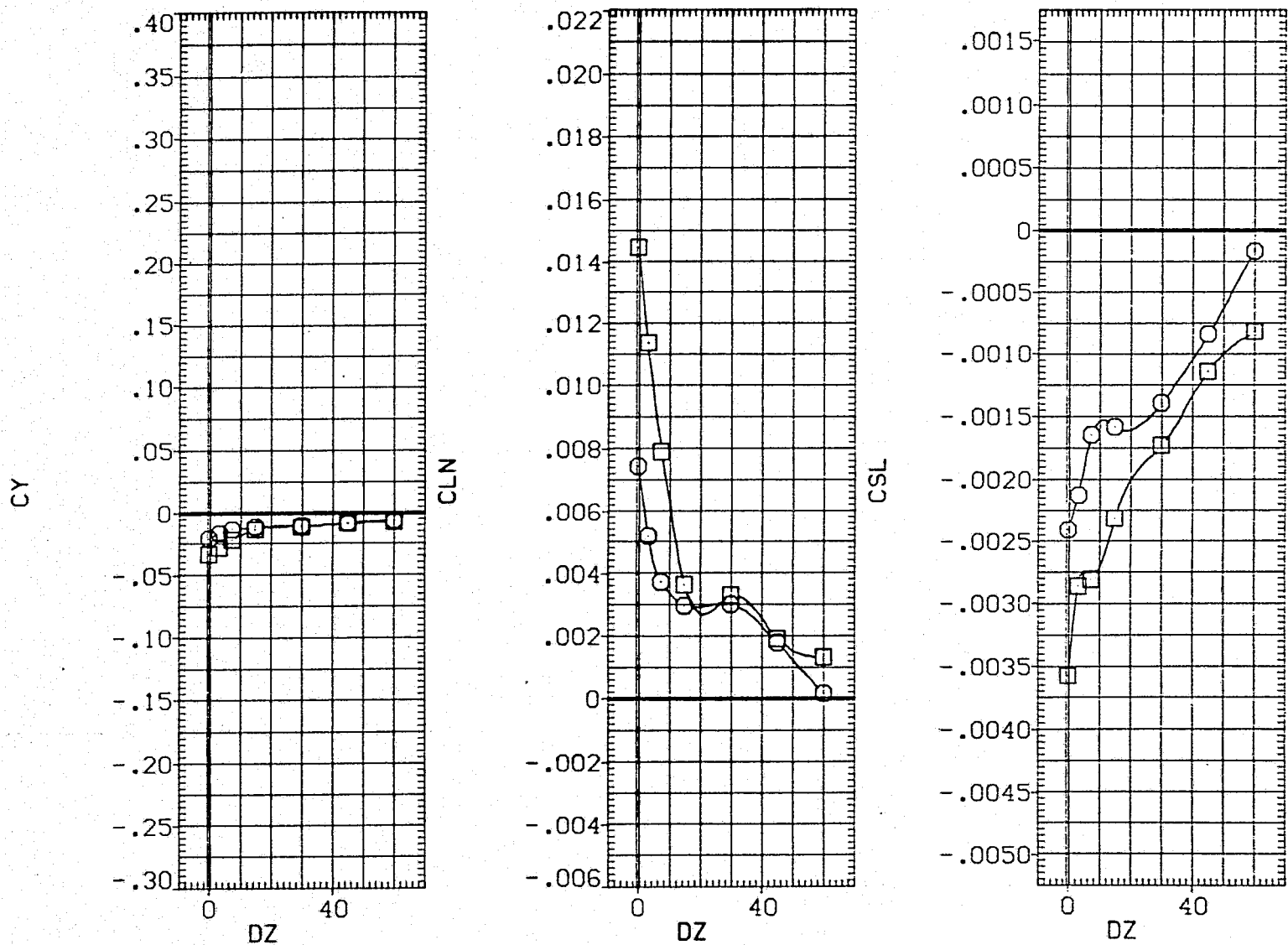


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

BETAC

.000

ELV-OB

3.000

MACH

.600

DX

.000

BETA0

.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7300	IN.
BREF	2348.0400	IN.
XMRP	1343.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

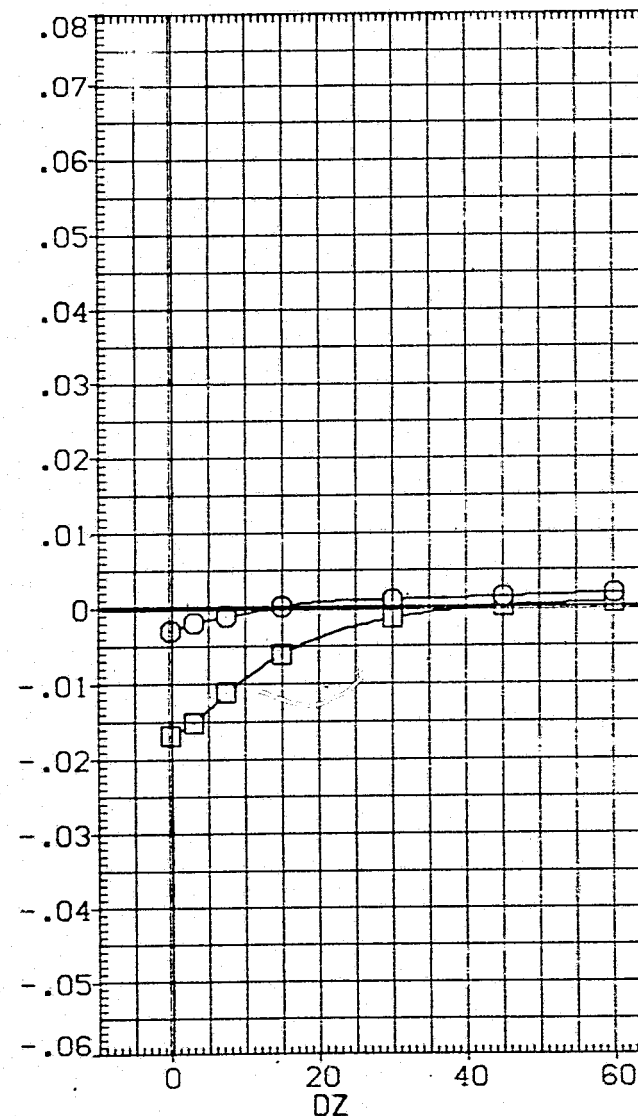
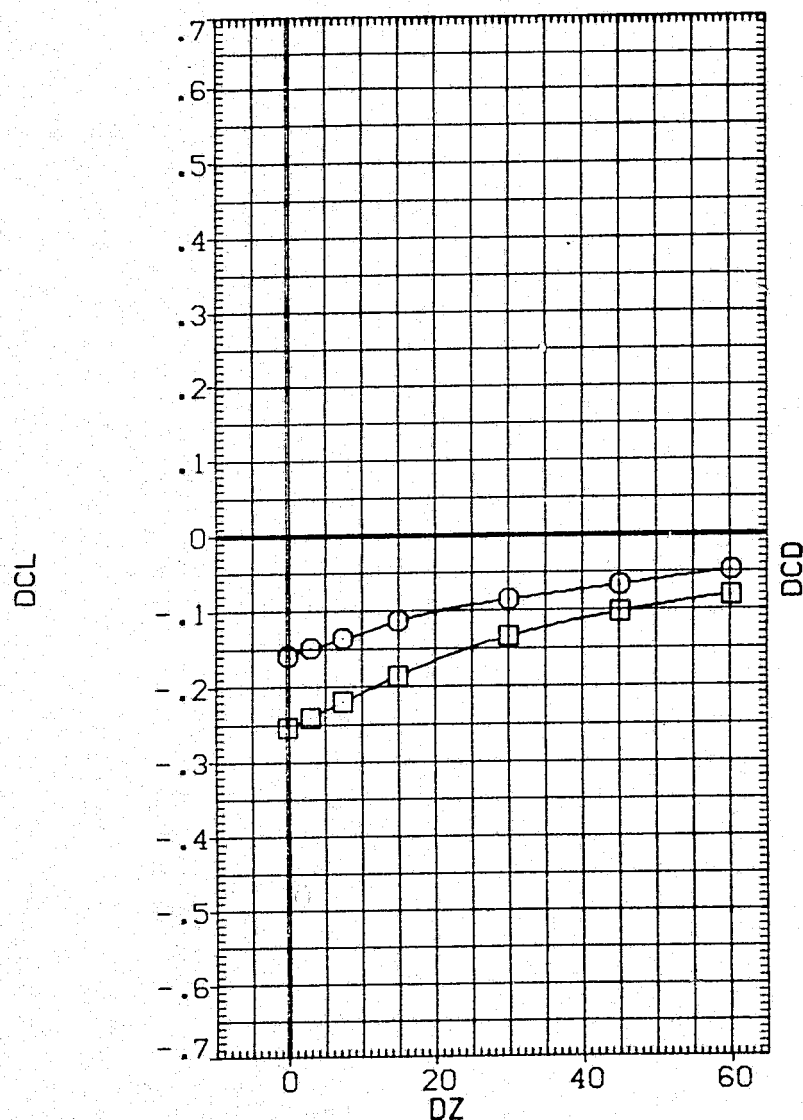


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 (747/1 01 S1) - (747/1)

D/S (084 - 035)(UGN084)

SYMBOL

○
□

ALPHA0

10.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

.000

ELV-1B

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

PHI

7.500

QX

.000

DY

.000

BETA0

.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

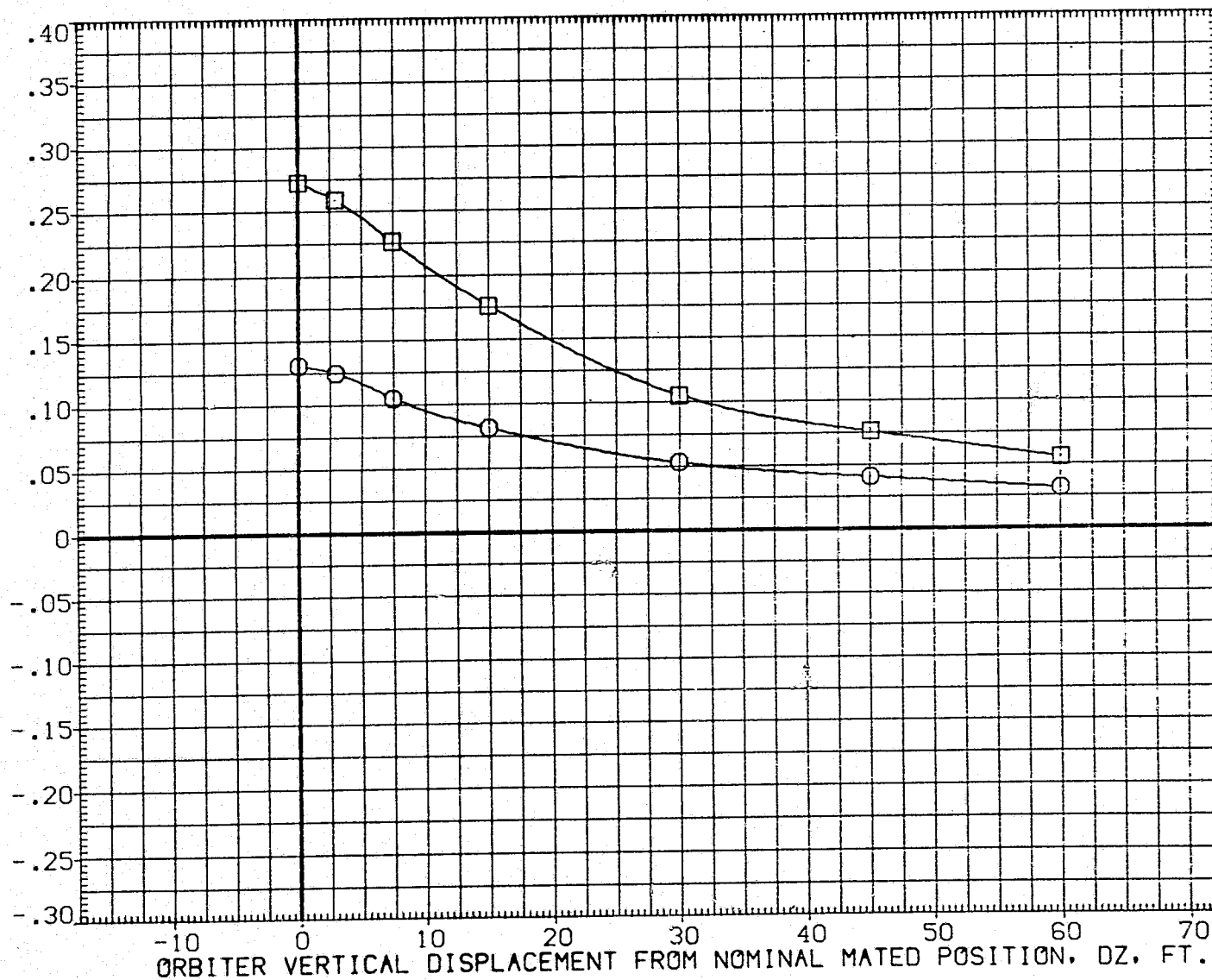


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□ALPHA0
10.000
14.000ALPHAC
ELV-1B
ELEVON
PHI
DY

PARAMETRIC VALUES

4.000 BETAC
.000 ELV-0B
5.000 MACH
7.500 DX
.000 BETA0.000
3.000
.600
.000
.000

REFERENCE INFORMATION

SREF	5500.0600	SO.FT.
LREF	327.7800	IN.
BREF	2346.0400	IN.
XMRF	1339.2000	IN.XC
YMRF	.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

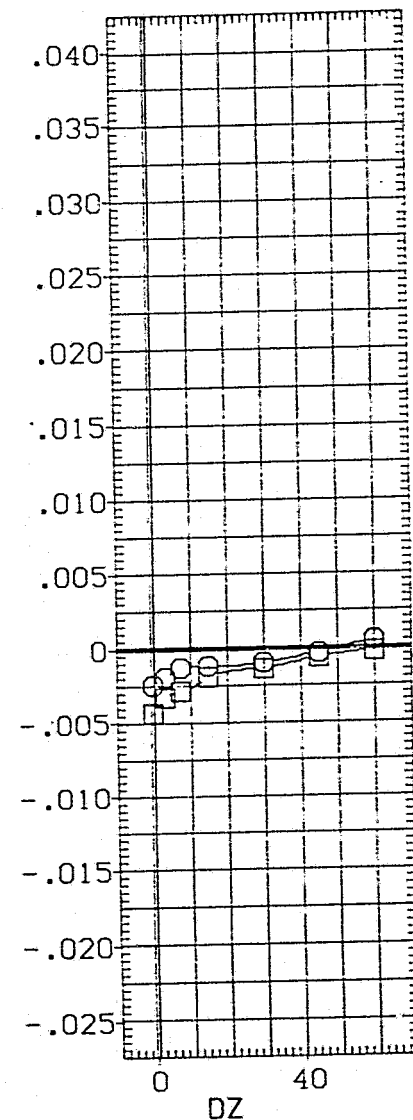
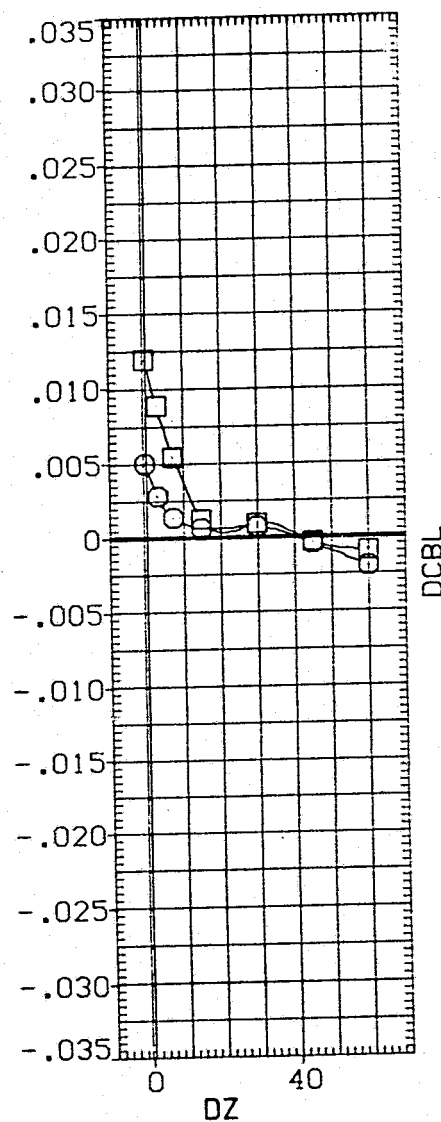
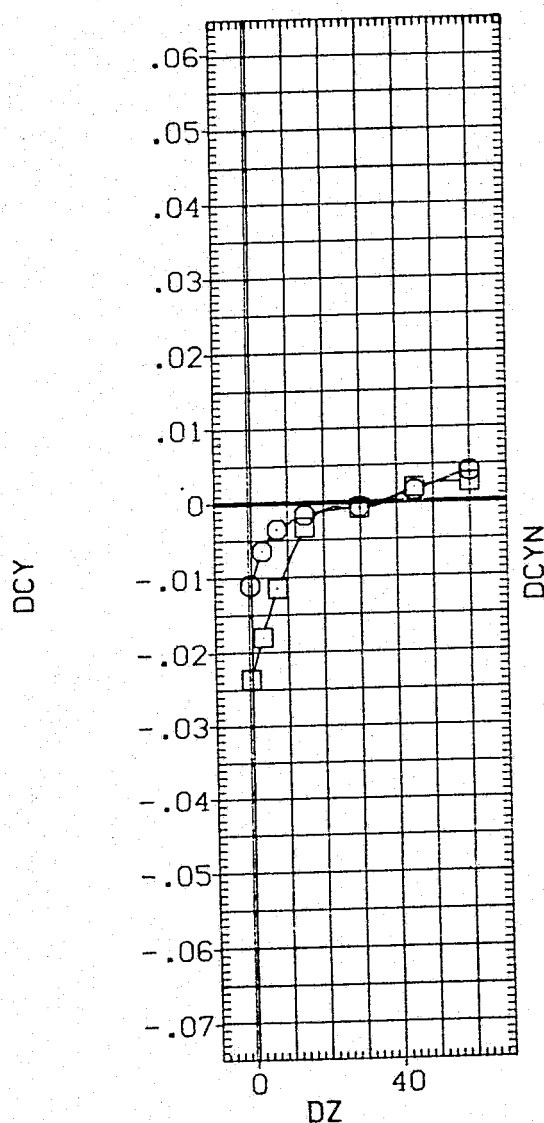


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC .000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX .000
		DY .000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

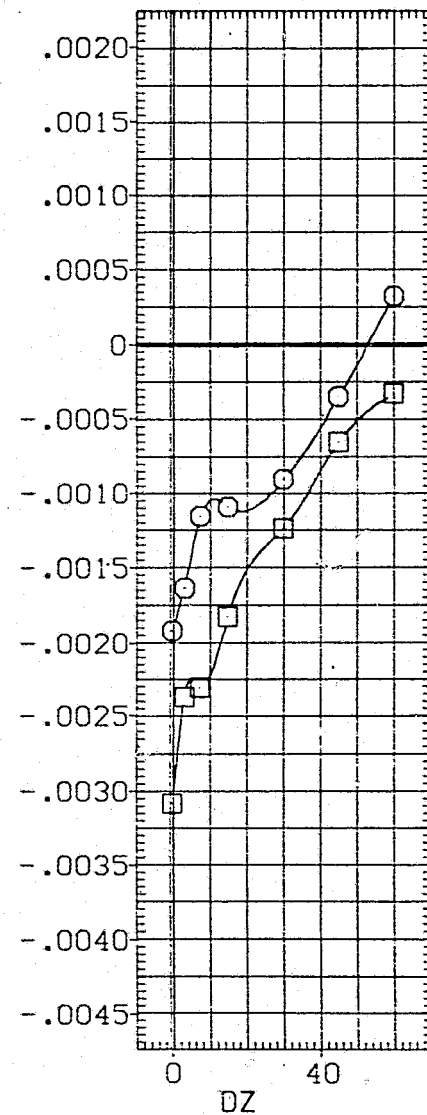
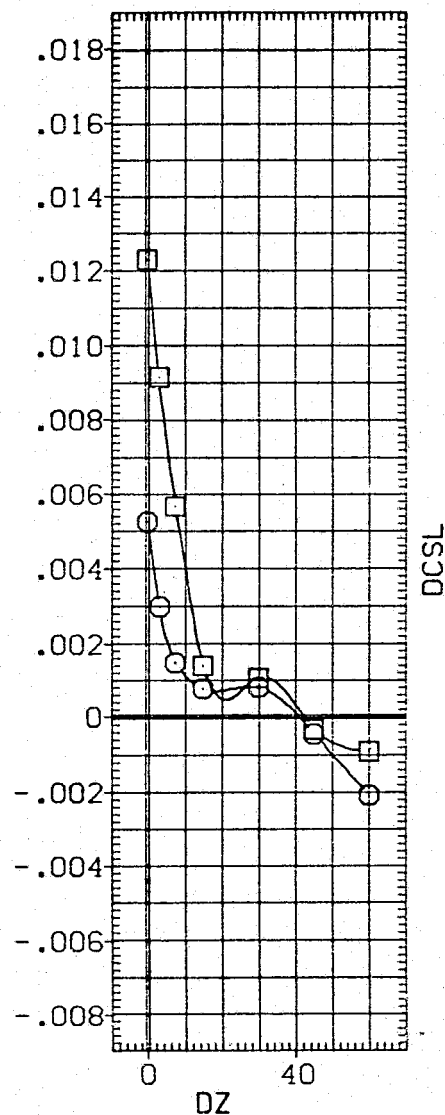
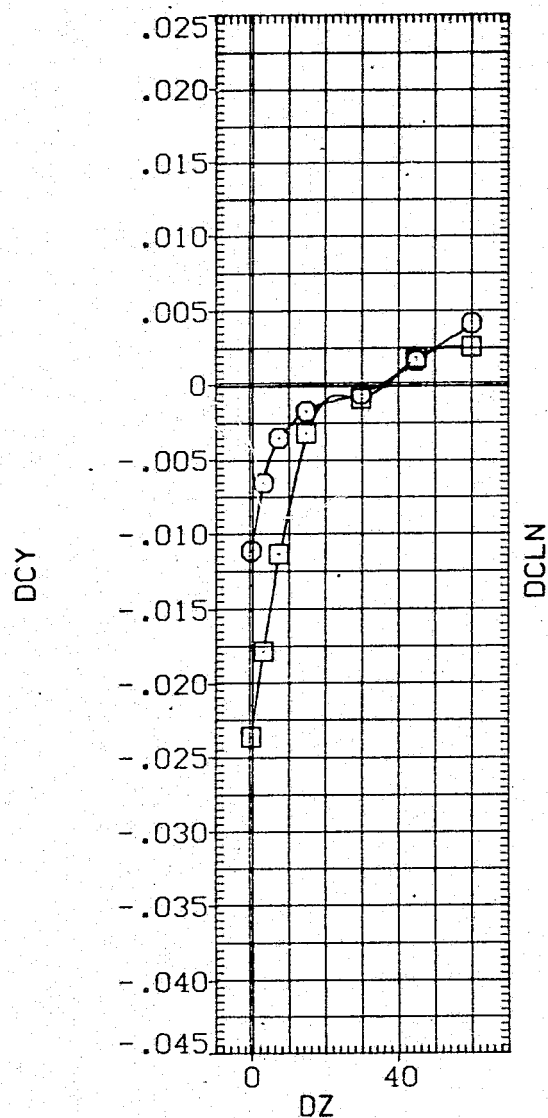


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGN080)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB
○	10.000	.000		3.000
□	14.000	5.000		.600
		BETA0		.000
		PHI		BETAC
		7.500		DY
		.000		.000
		DX		ALPHAC
		.000		8.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

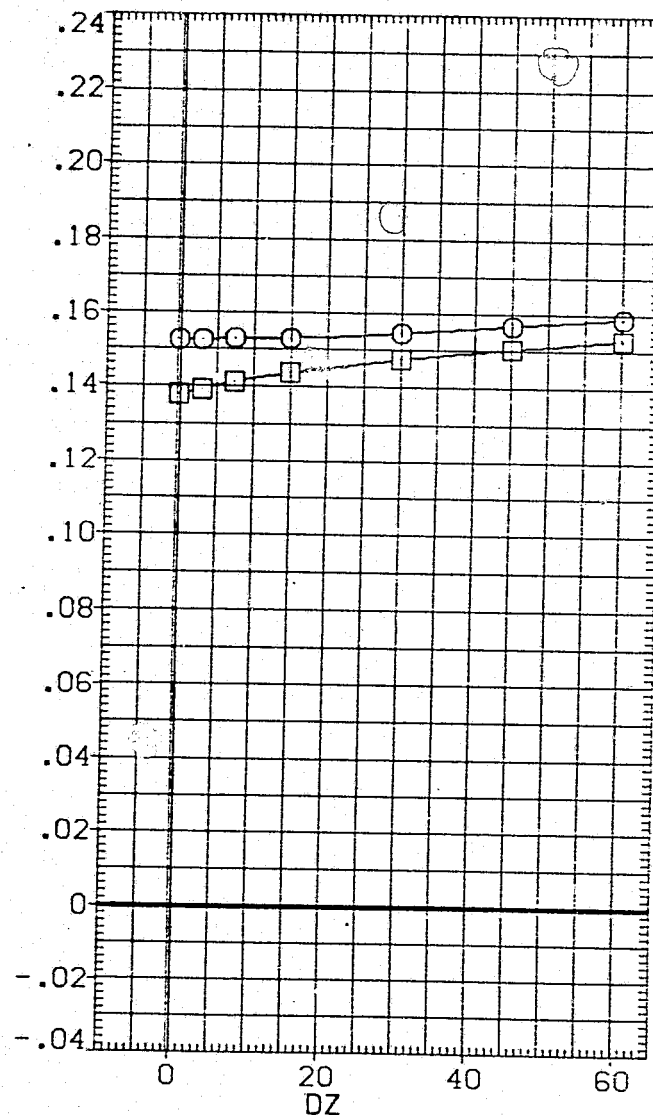
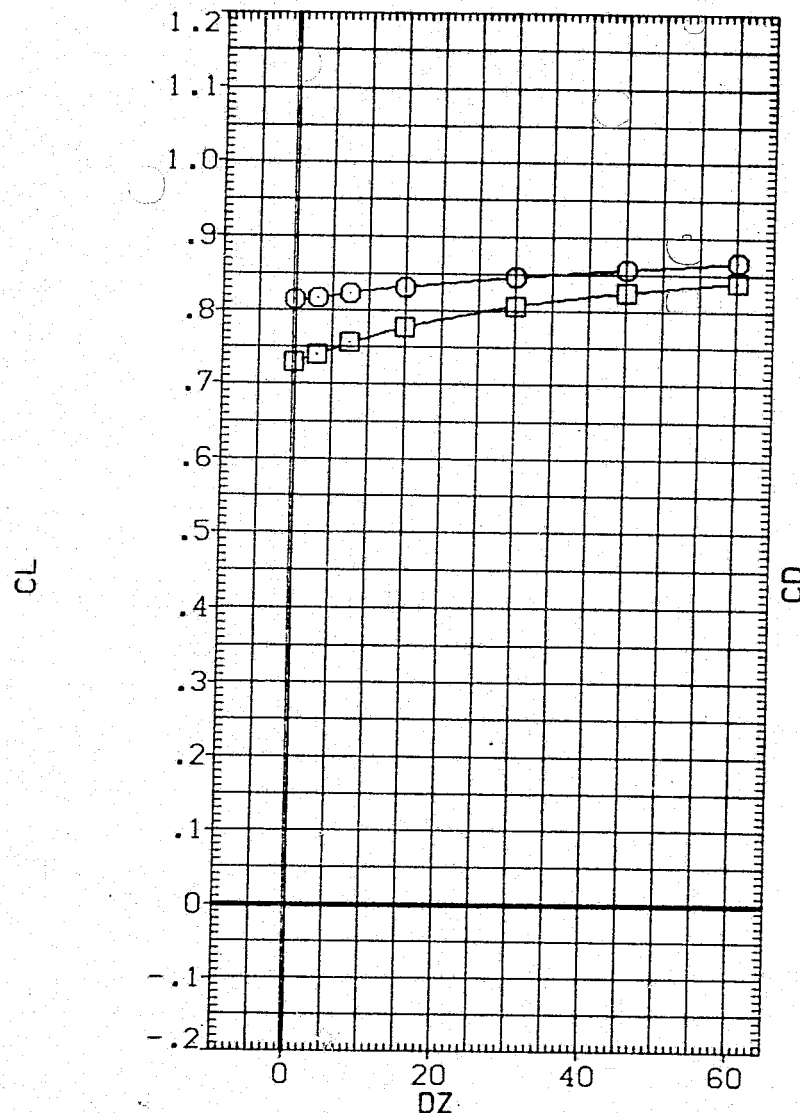


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-IB	.000	ELV-OB	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

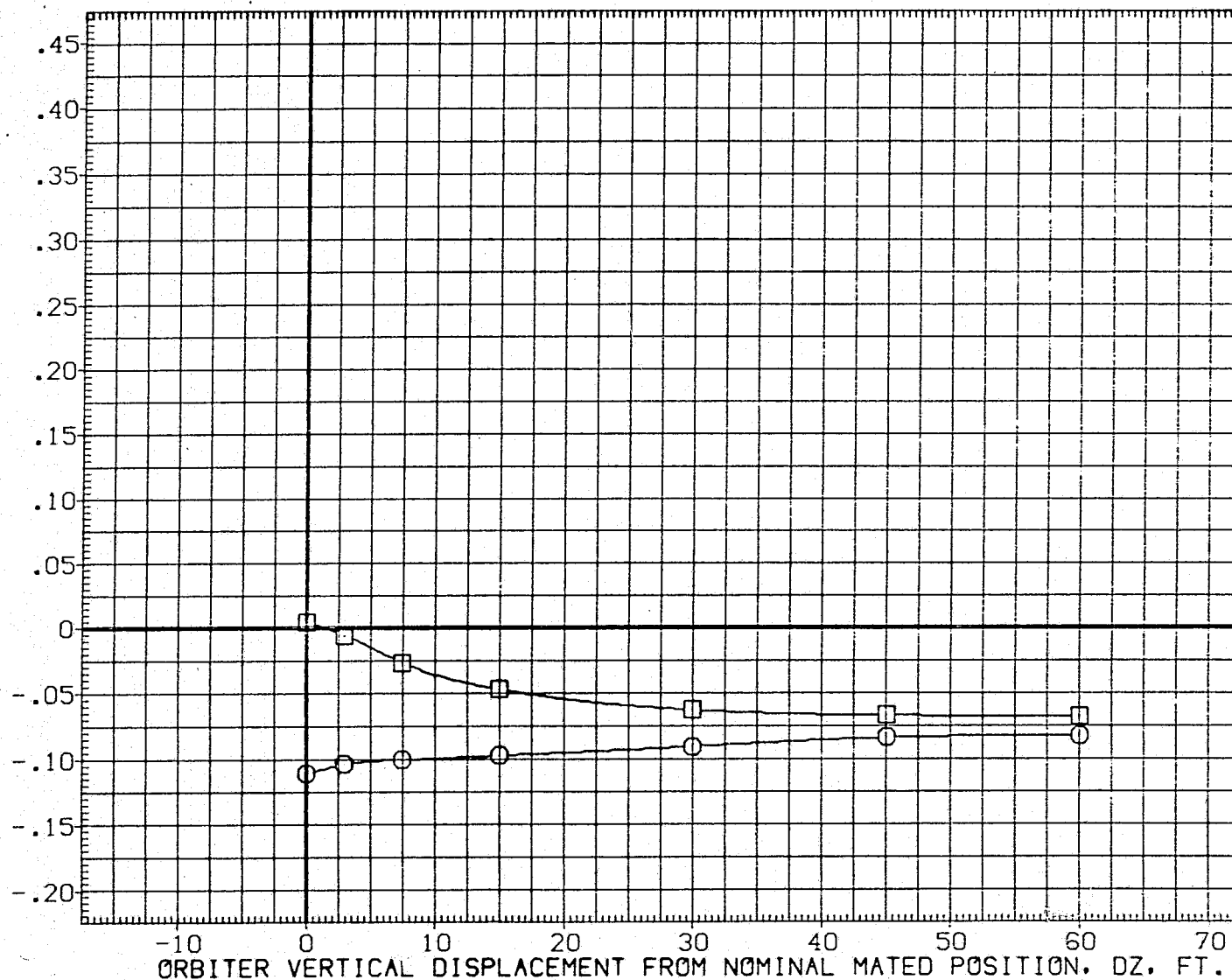


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGN086)

SYMBOL		PARAMETRIC VALUES				
○	ALPHA0	10.000	ELV-18	.000	ELV-08	3.000
□		14.000	ELEV0N	5.000	MACH	.600
			BETA0	.000	BETAC	.000
			PHI	7.500	DY	.000
			DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

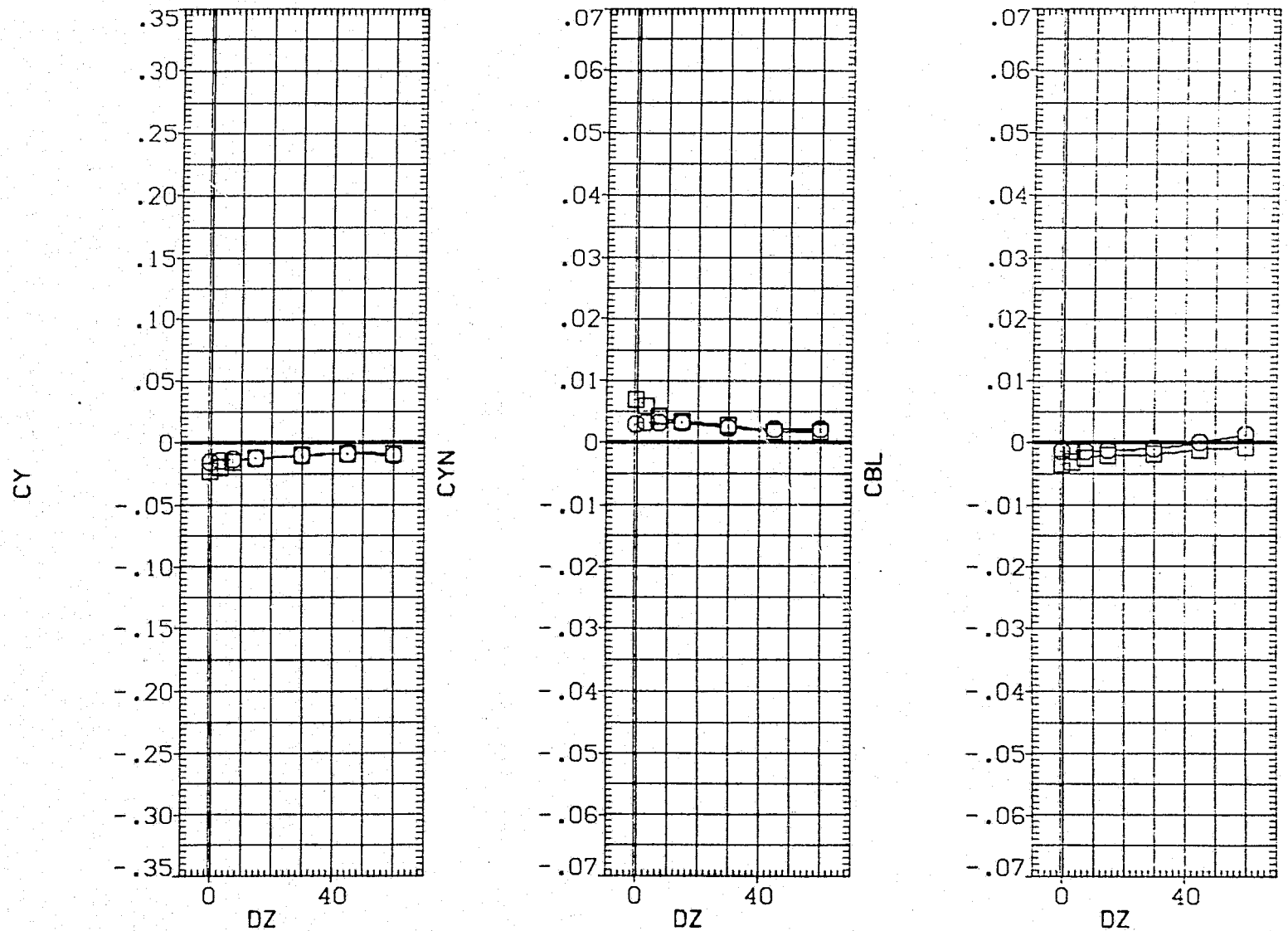


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-IB .000 ELV-OB 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC .000
		PHI 7.500 DY .000
		DX .000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

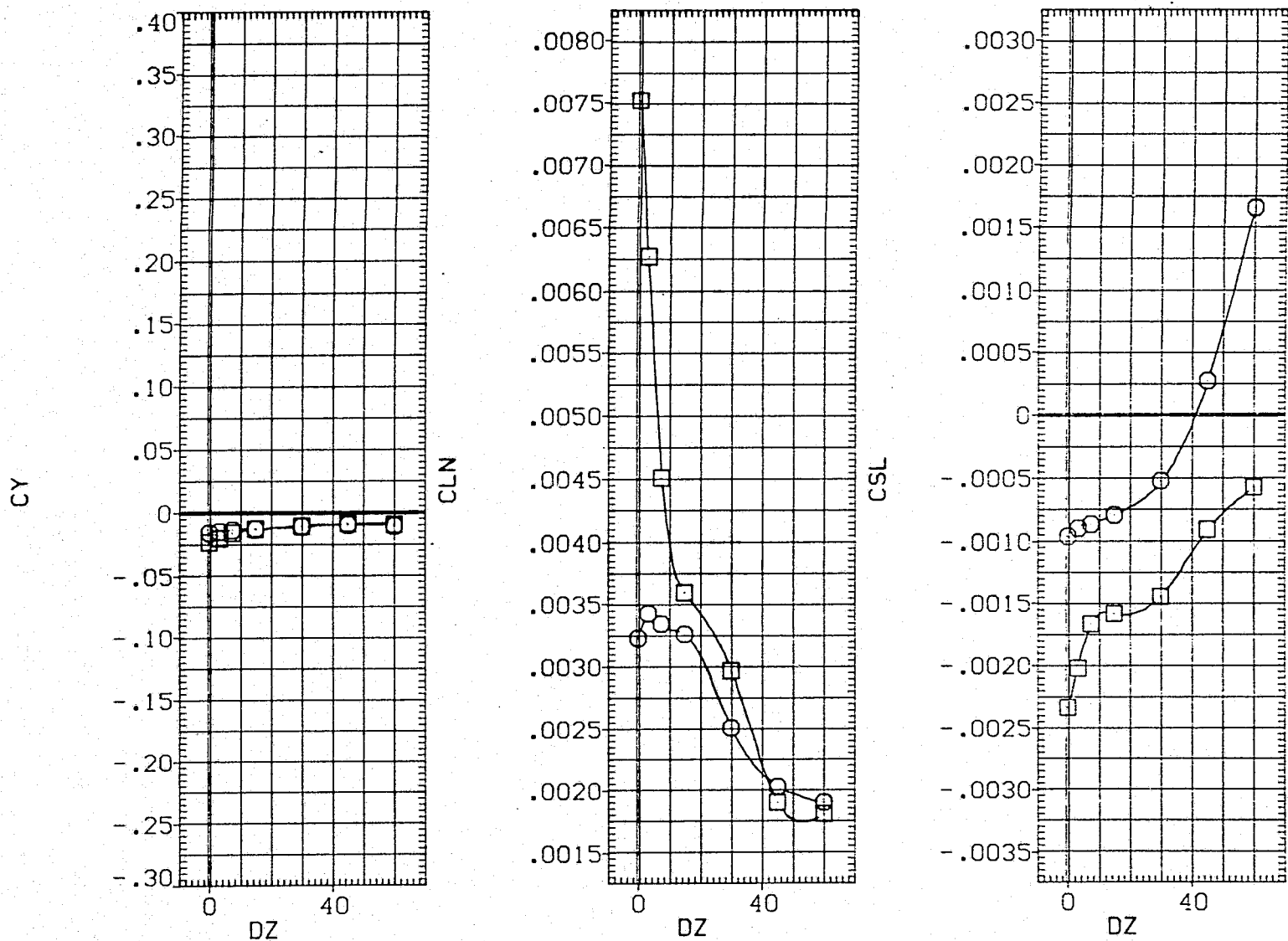


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

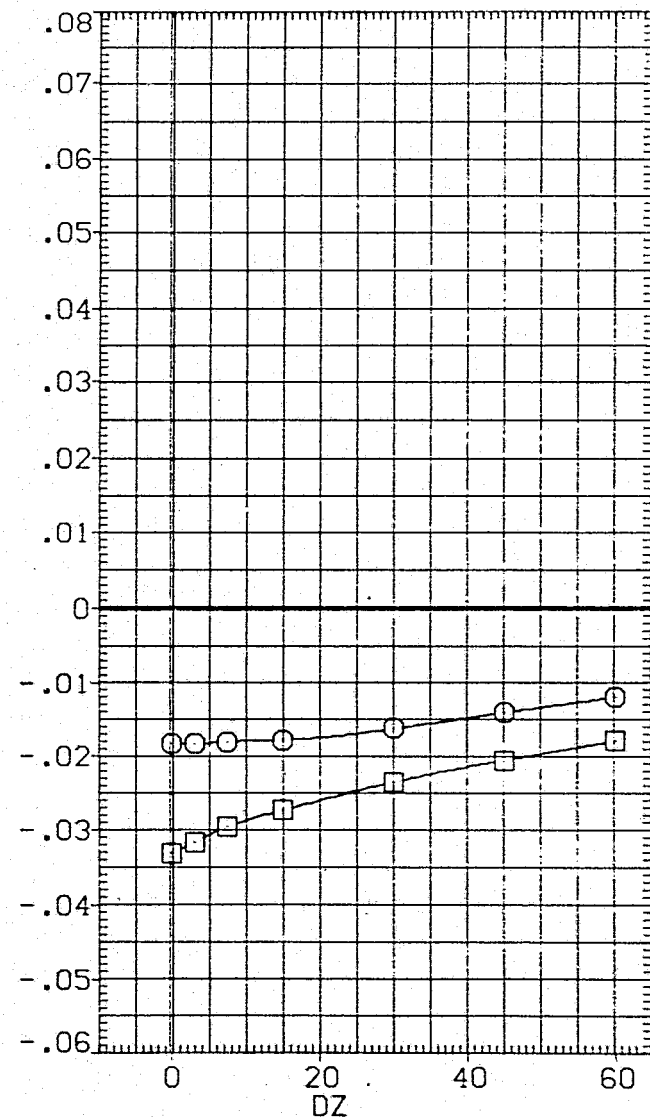
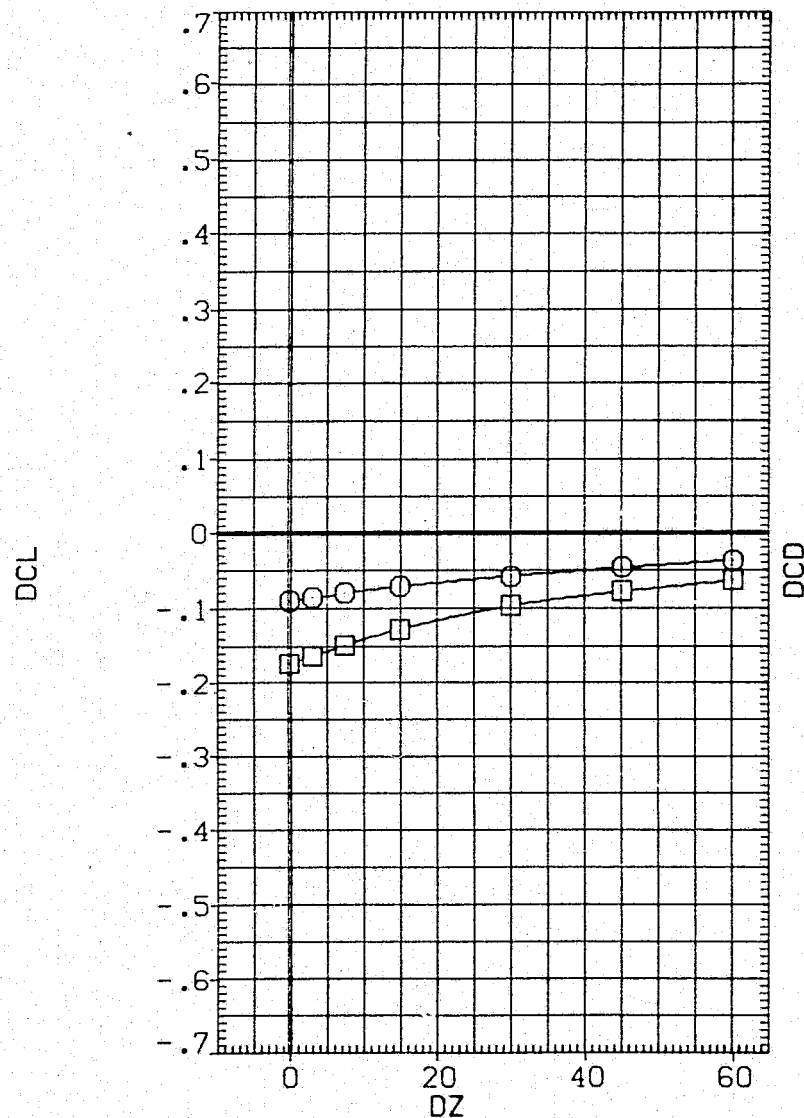


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○

□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

7.500

.000

BETAC

ELV-OB

MACH

DX

BETA0

.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

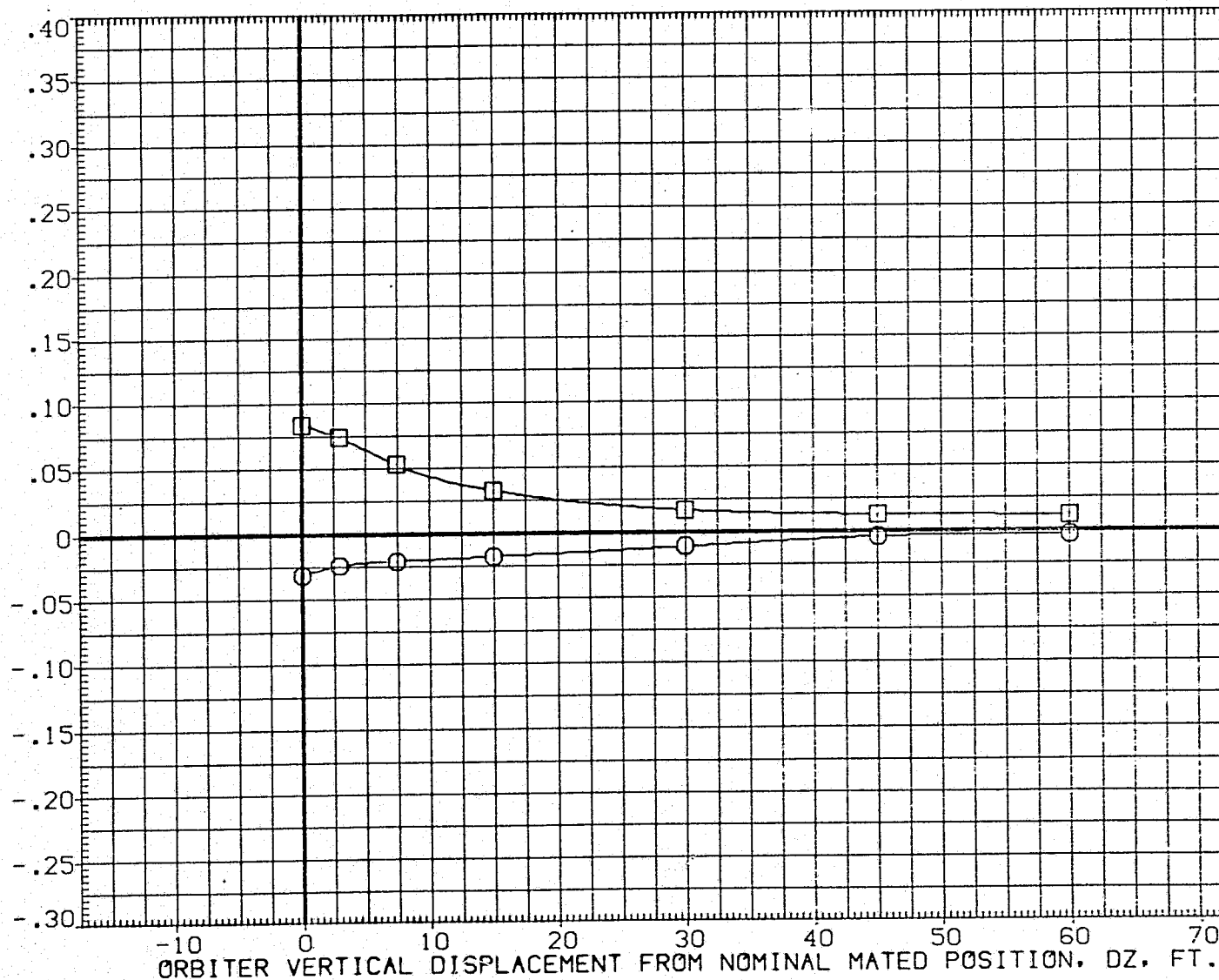


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	
○	10.000	ALPHAC	8.000	BETAC
□	14.000	ELV-18	.000	ELV-08
		ELEVON	5.000	MACH
		PHI	7.500	DX
		DY	.000	BETA0
				.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.AC
YMRF	.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

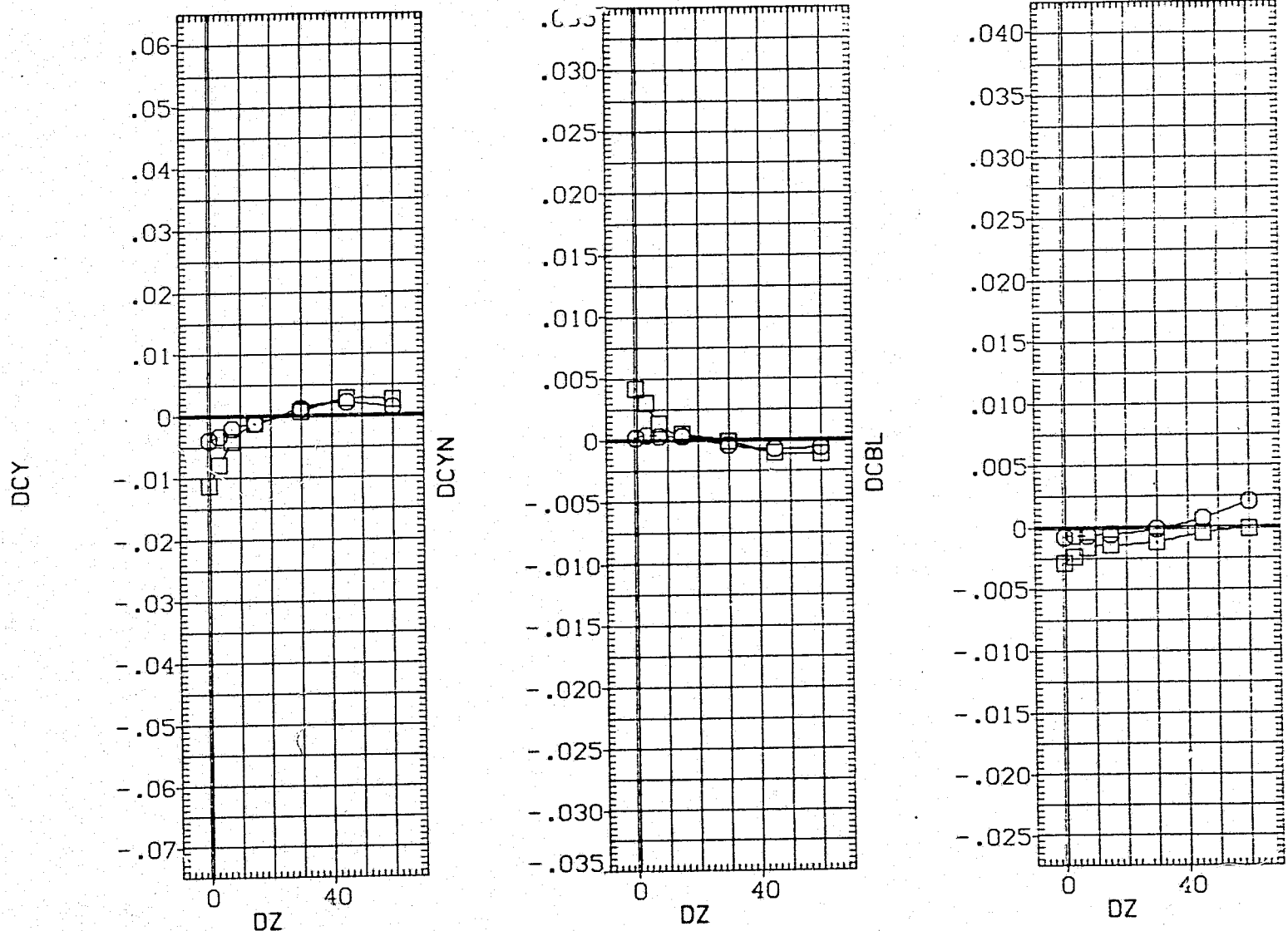


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	8.000	BETAC	.000
○	14.000	ELV-IB	.000	ELV-OB	3.000
□		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

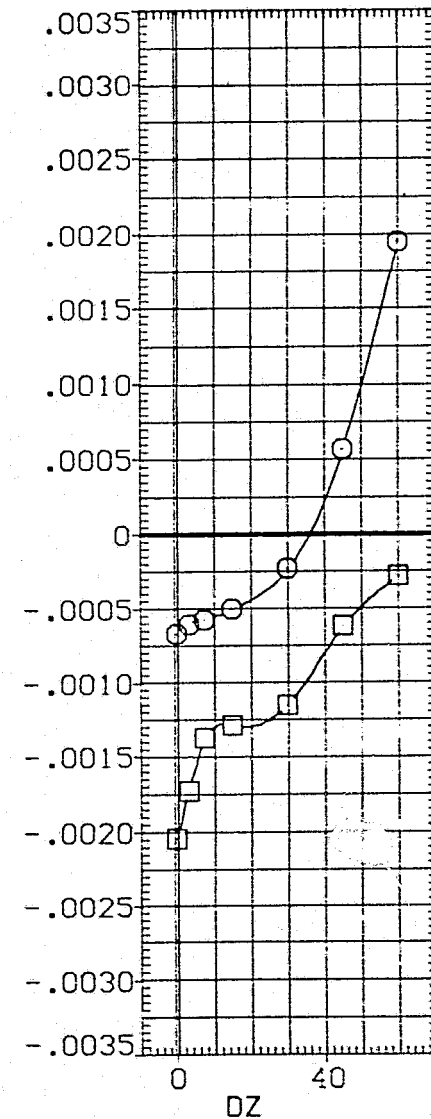
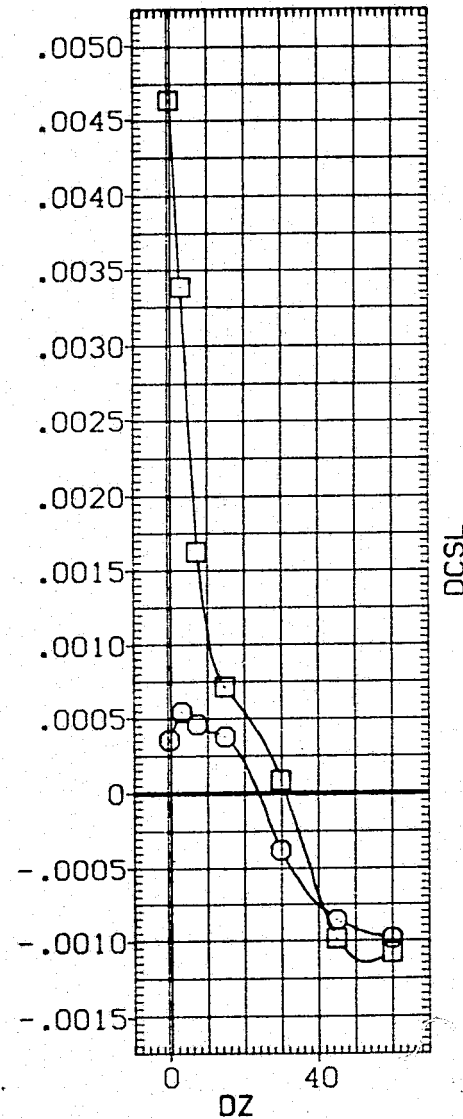
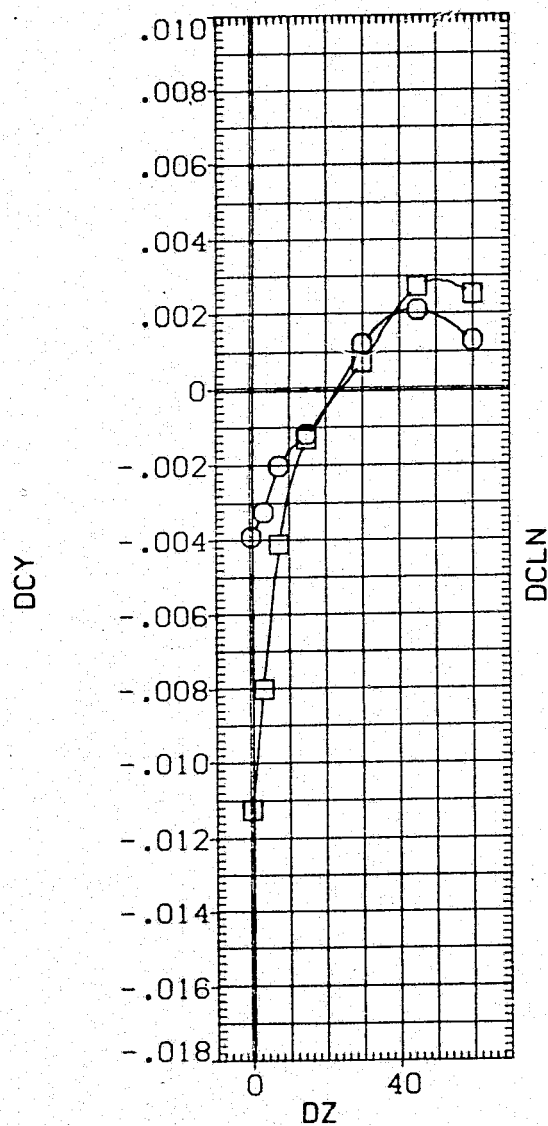


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA

10.000

14.000

ELV-1B

ELEVON

BETA

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

10.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

.000

.000

4.000

REFERENCE INFORMATION

SREF 5520.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2349.0400 IN.

XMRP 1338.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

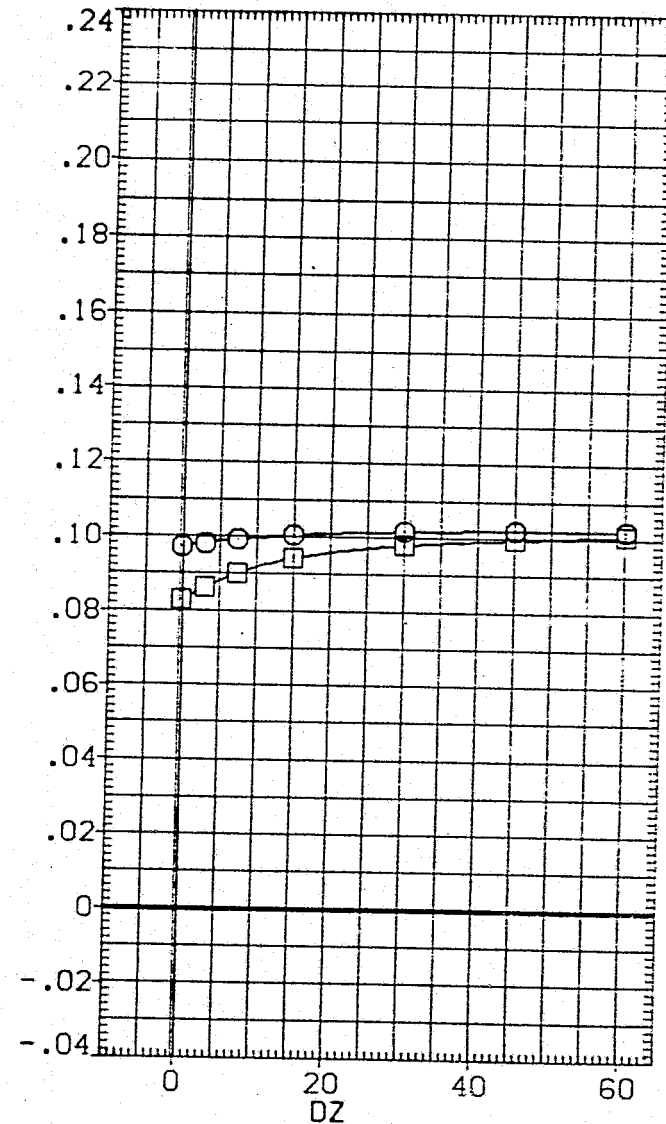
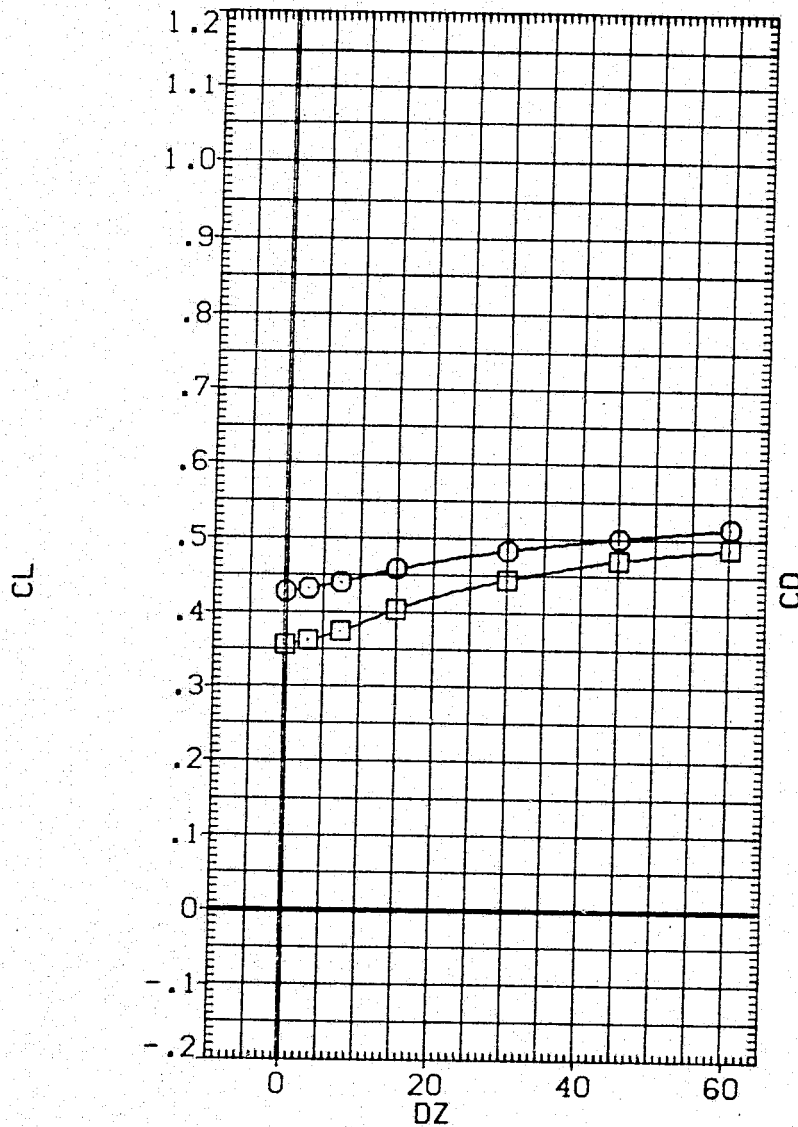


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC .000
		PHI 7.500 DY .000
		DX 10.000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

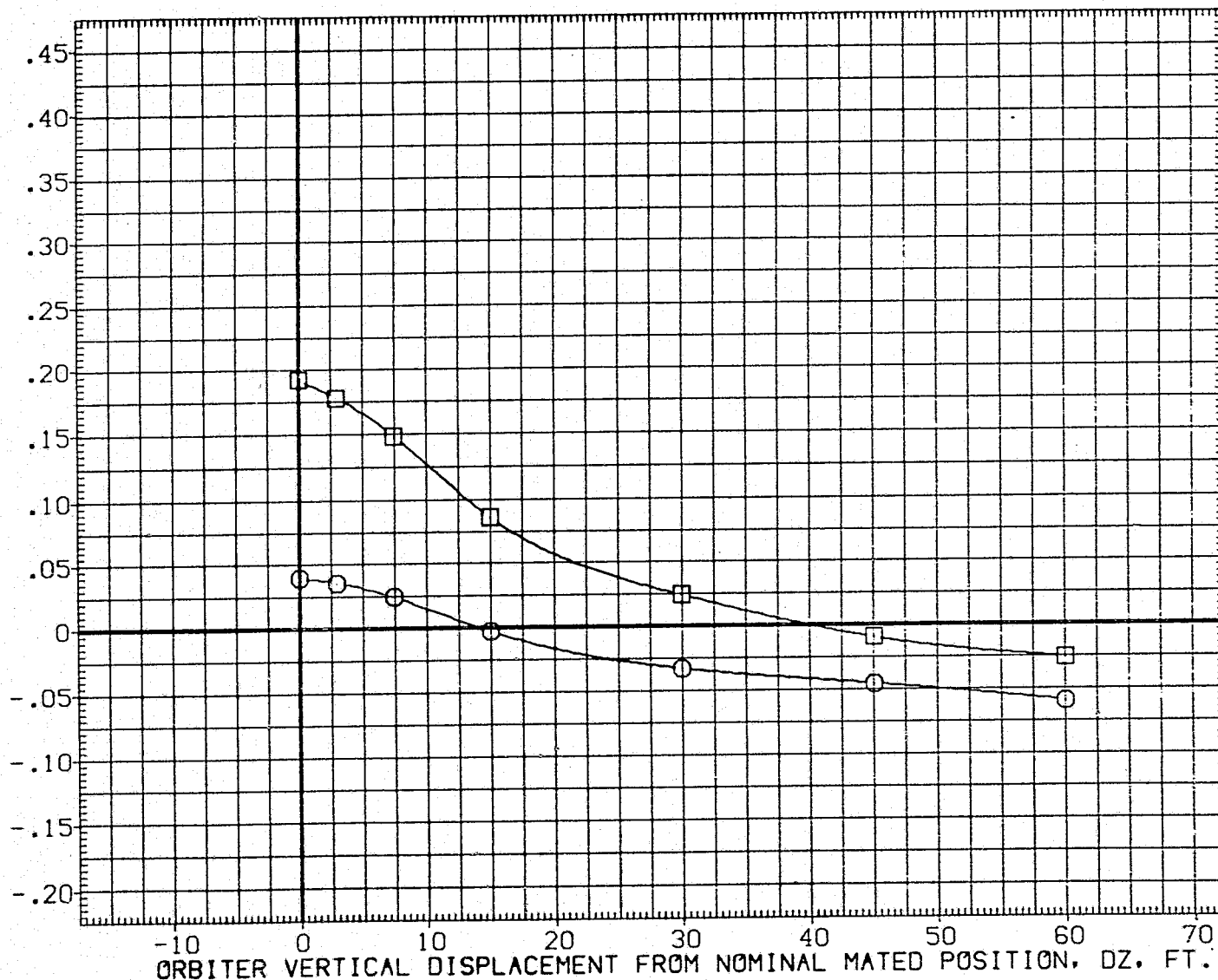


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MCN085)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

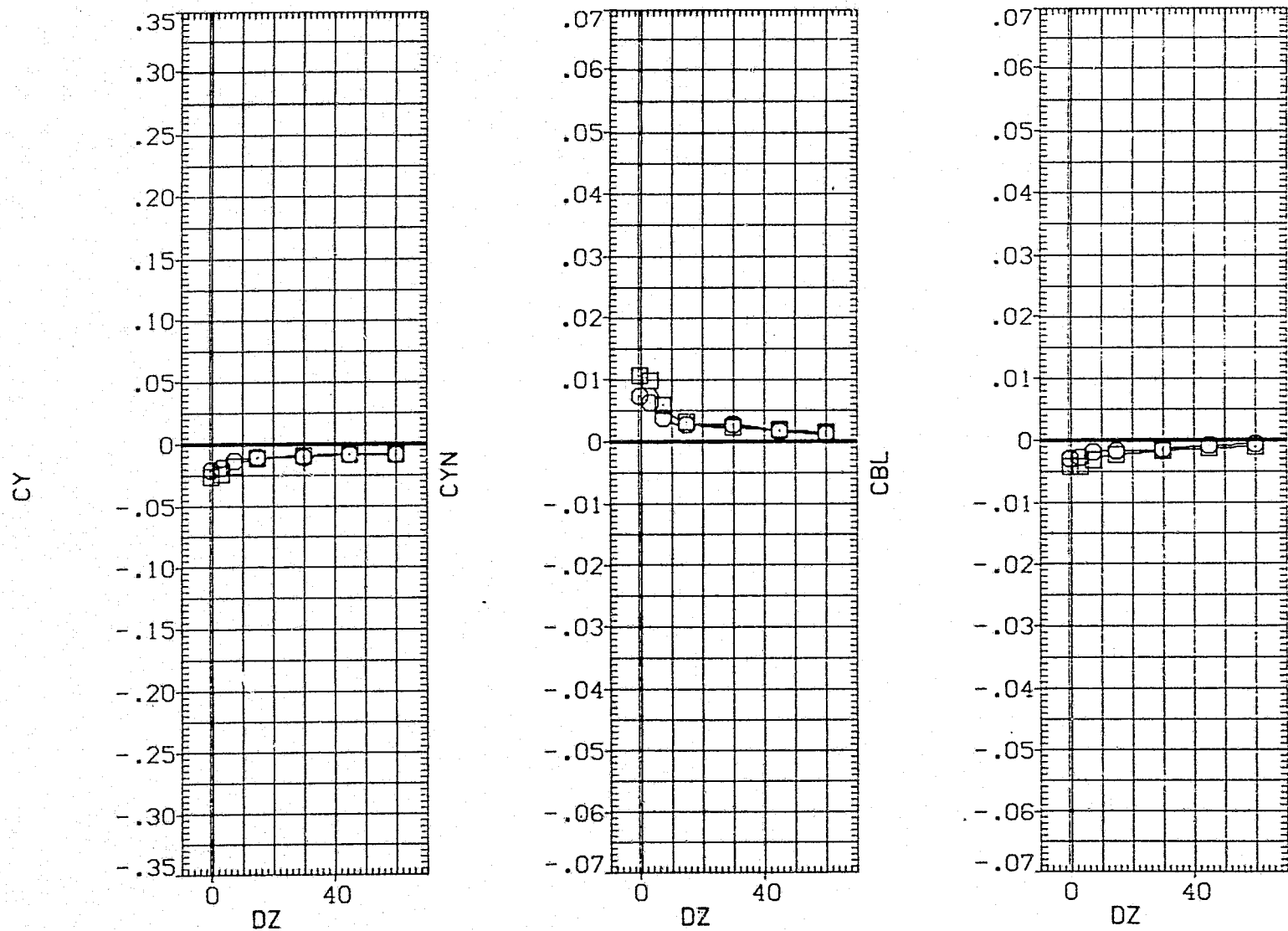


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC .000
		PHI 7.500 DY .000
		DX 10.000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

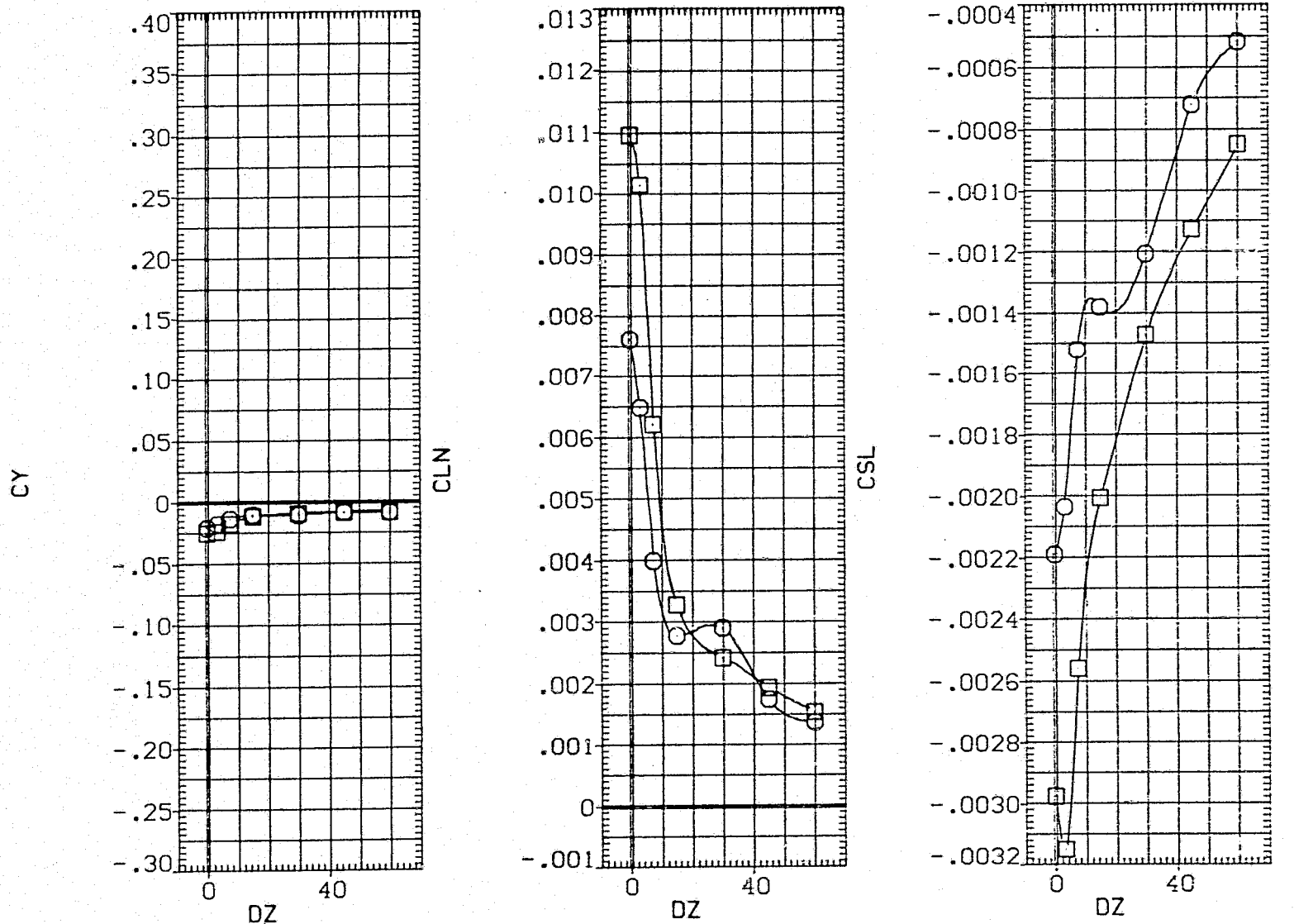


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000
14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

BETAC

.000

ELV-OB

3.000

MACH

.600

DX

10.000

BETA0

.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

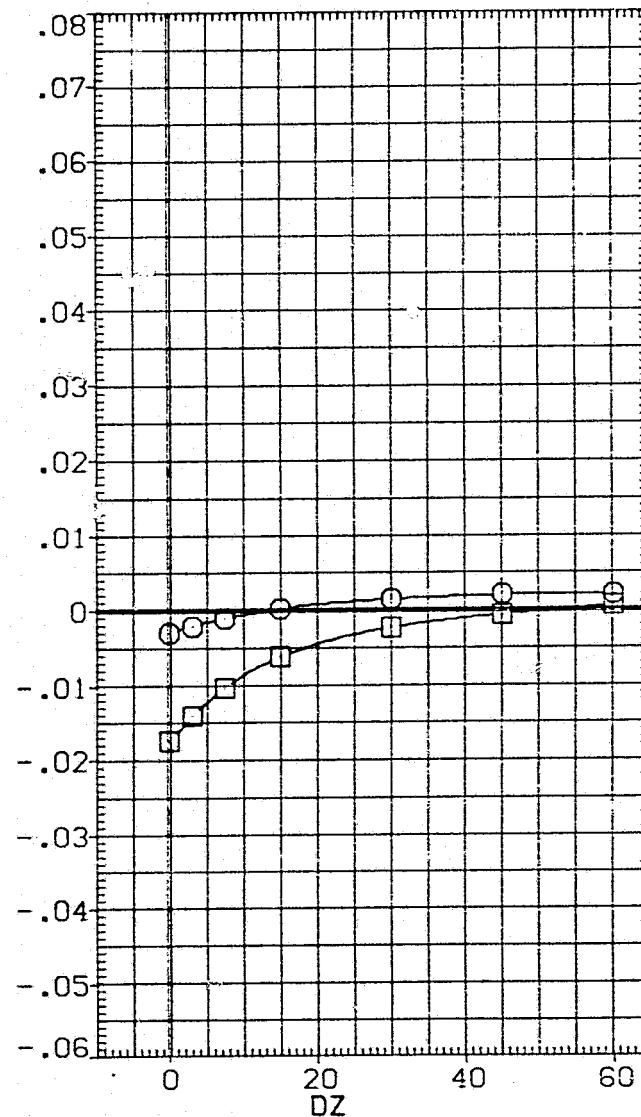
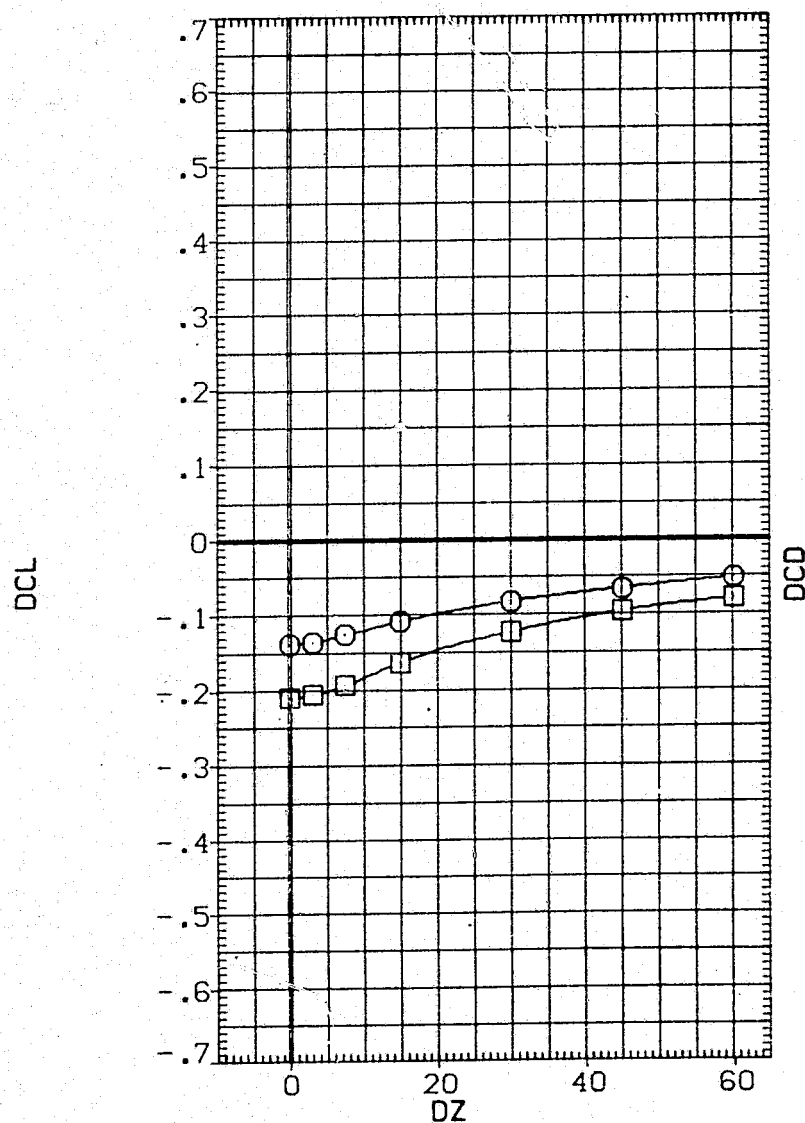


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

.000

ELV-1B

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

PHI

7.500

DX

10.000

DY

.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

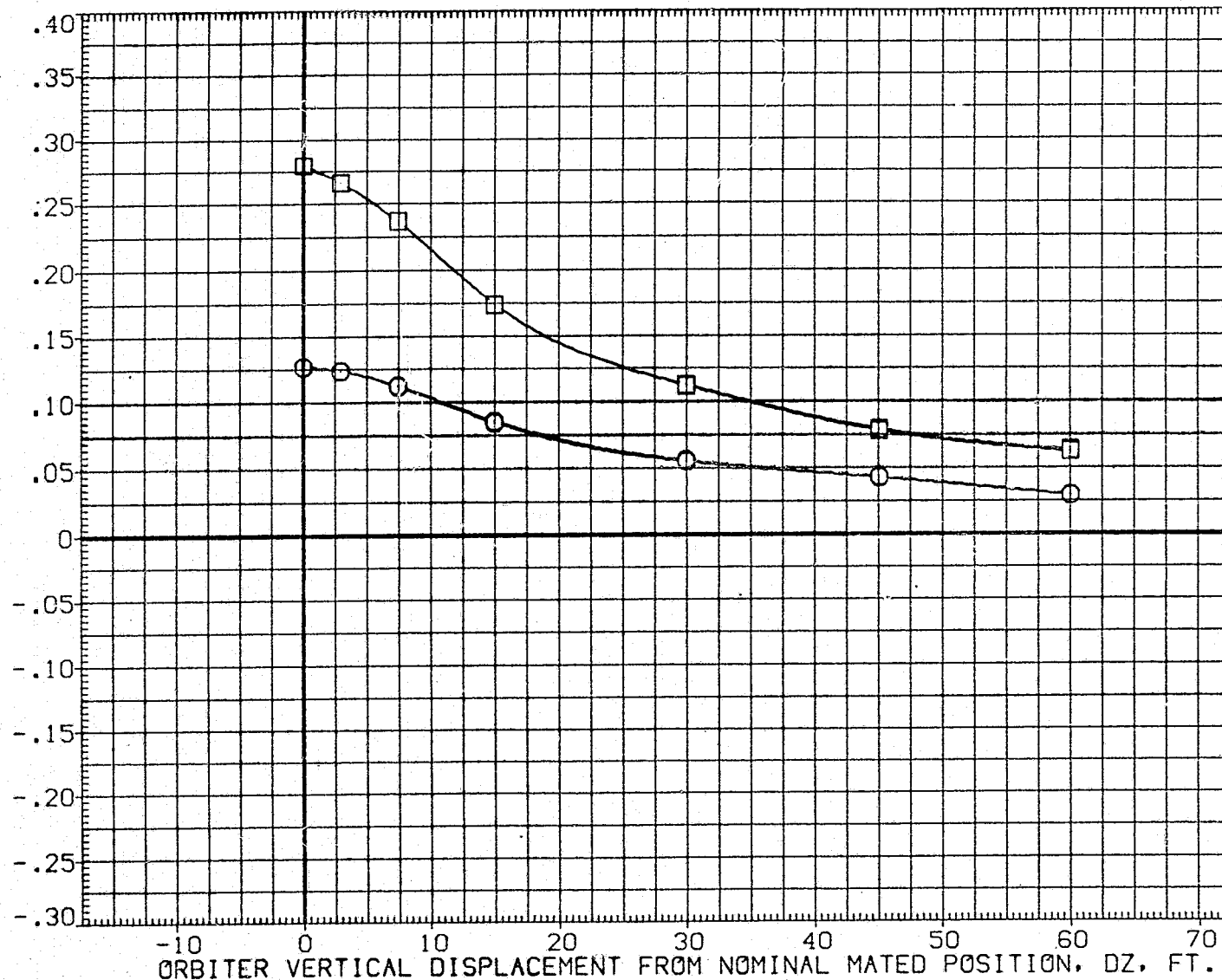


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	ELV-1B	4.000	.000
□	14.000	ELEVON	.000	3.000
		PHI	5.000	.600
		DY	7.500	10.000
			BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7830	IN.
BREF	2348.0400	IN.
XMRP	1313.0000	IN.XC
YMRP	1000.0000	IN.YC
ZMRP	190.0000	IN.ZC
SCALE	.0300	

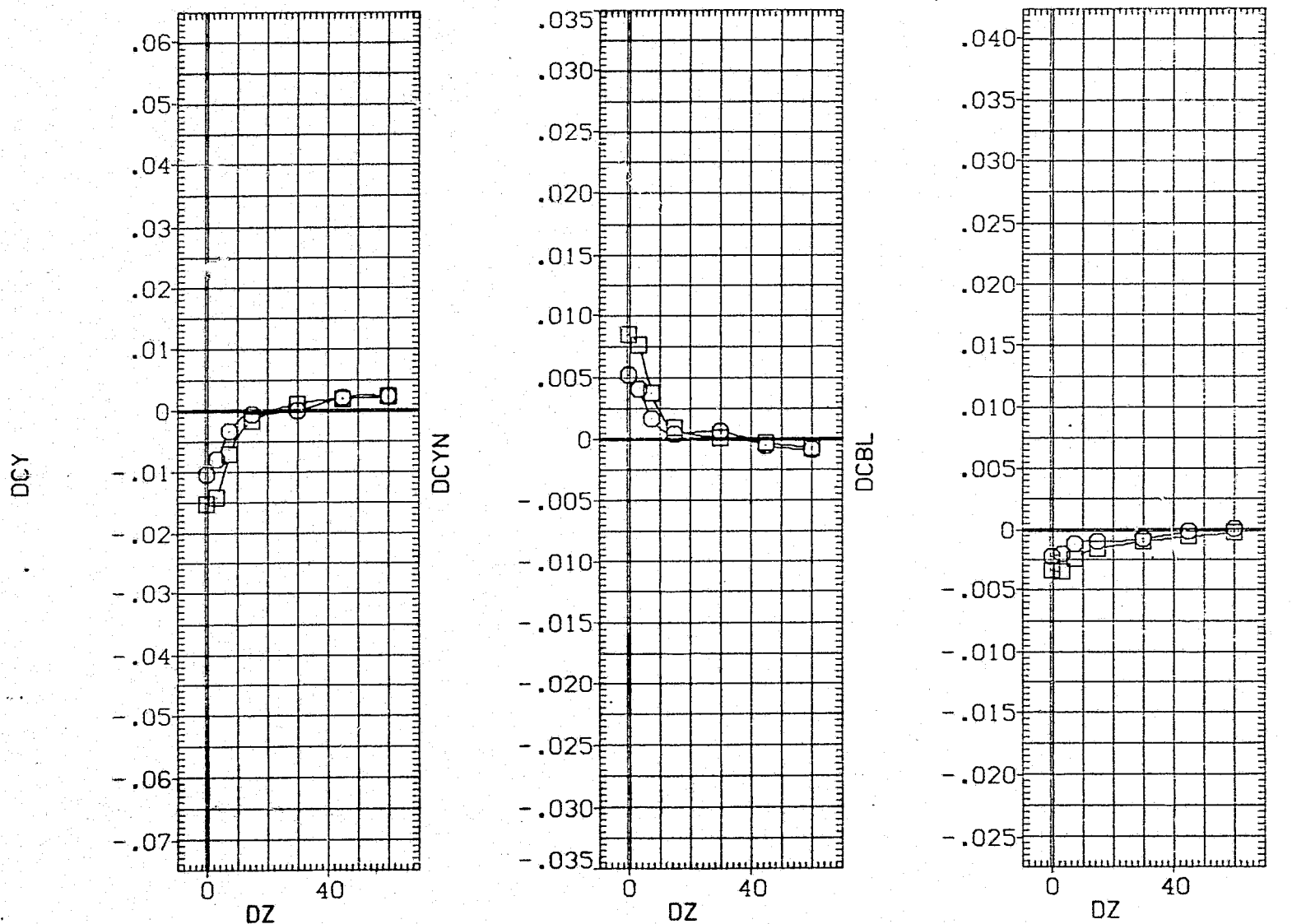


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 4.000 BETAC .000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX 10.000
		DY .000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

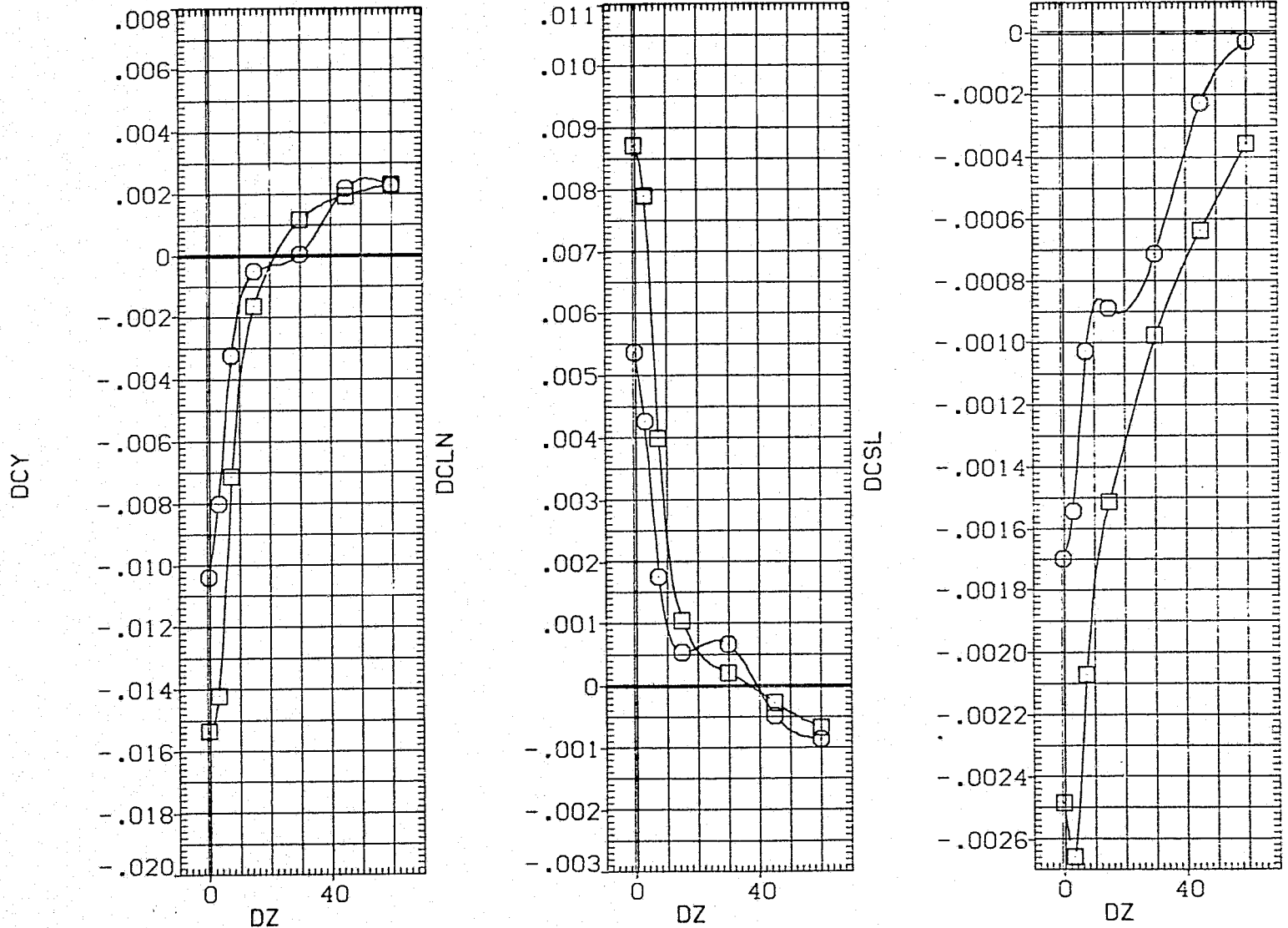


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHAO	ELV-18	PARAMETRIC VALUES	ELV-08	
○	10.000	.000	MACH	.600	
□	14.000	5.000	BETAC	.000	
		.000	DY	.000	
		7.500	ALPHAC	8.000	
		10.000			

REFERENCE INFORMATION		
SREF	5500.0000	SG.FY.
LREF	327.7800	IN.
BREF	2380.0400	IN.
XMRP	12.0000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

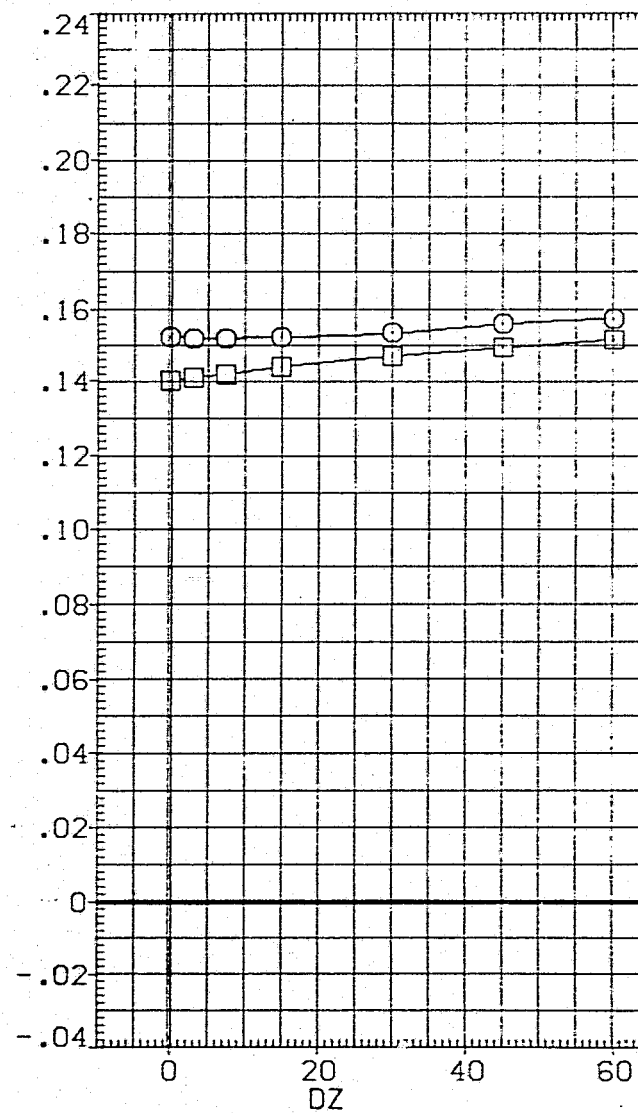
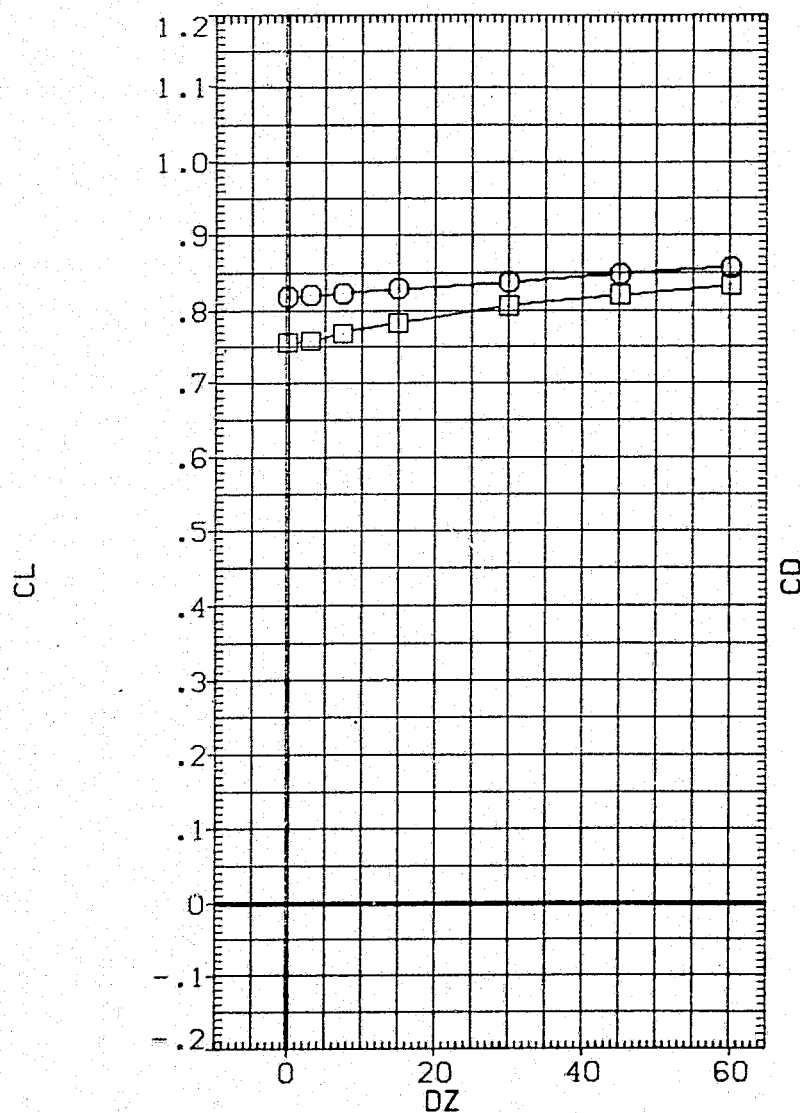


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XM RP	1339.9000	IN.XC
YM RP	.0000	IN.YC
ZM RP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

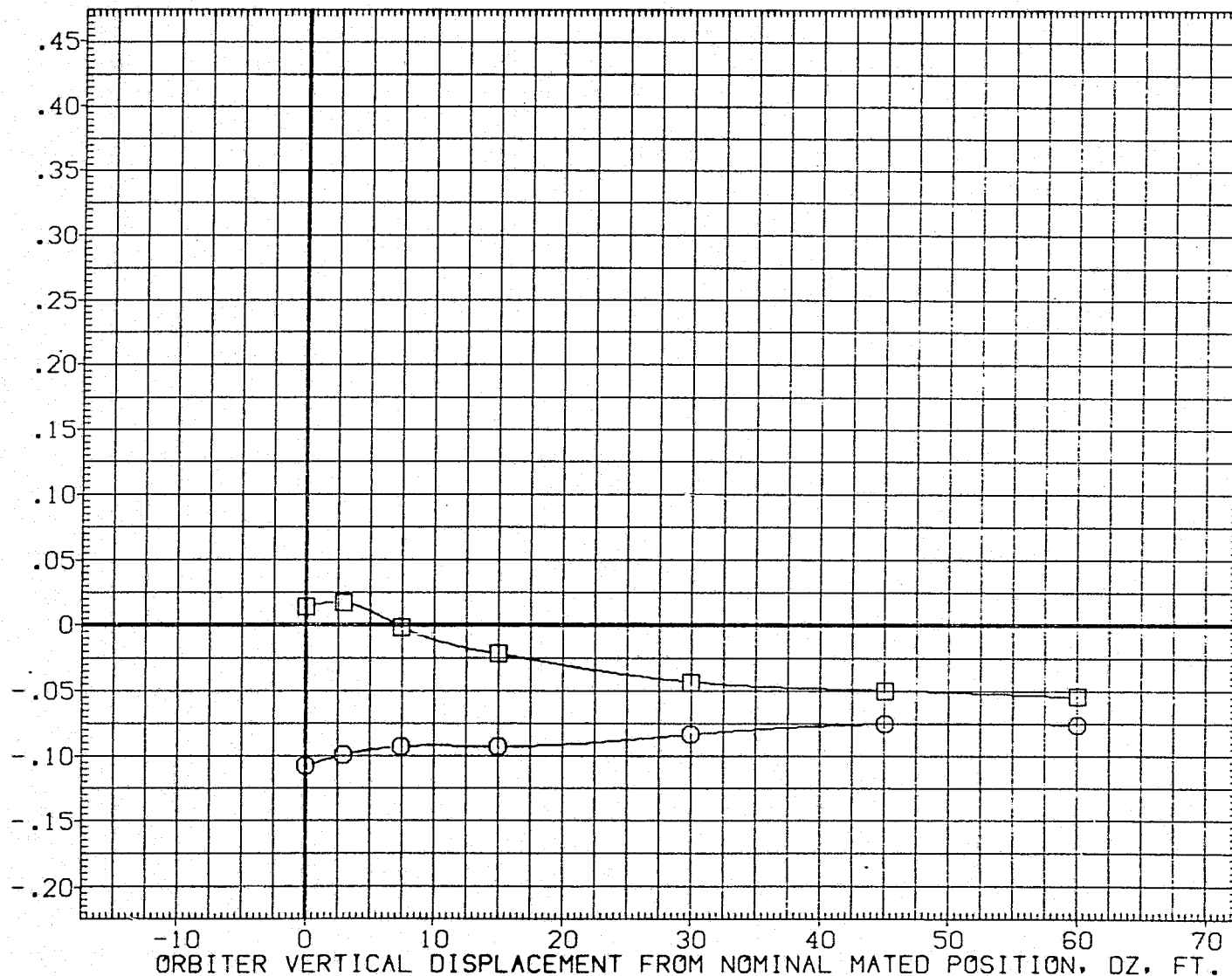


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B
○	10.000	.000	MACH	3.000
□	14.000	5.000	BETAC	.600
		.000	DY	.000
		7.500	ALPHAC	8.000
		10.000		

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1933.9000	IN. VC
YMRP	.0000	IN. VC
ZMRP	190.8000	IN. VC
SCALE	.0300	

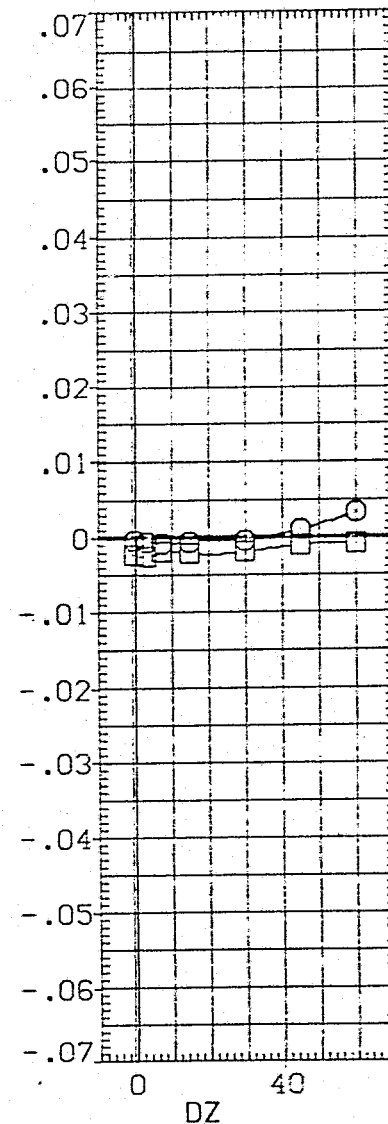
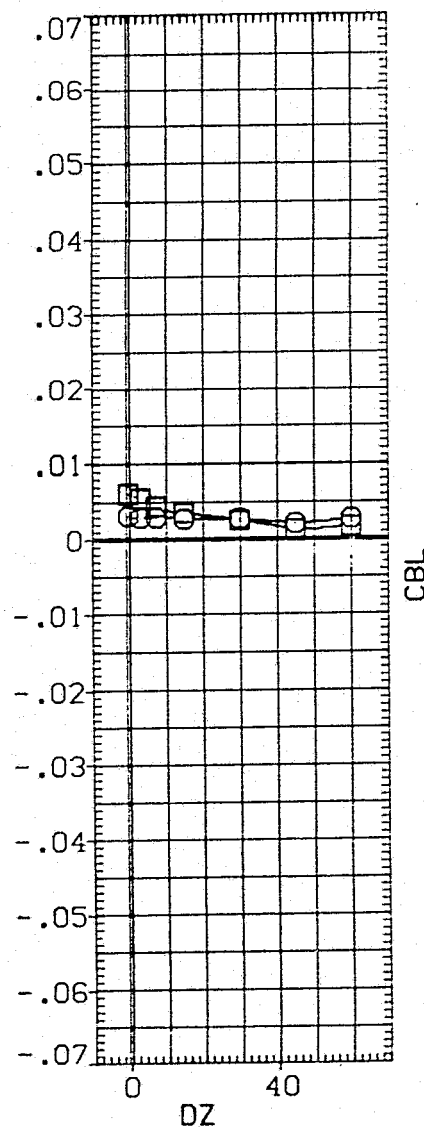
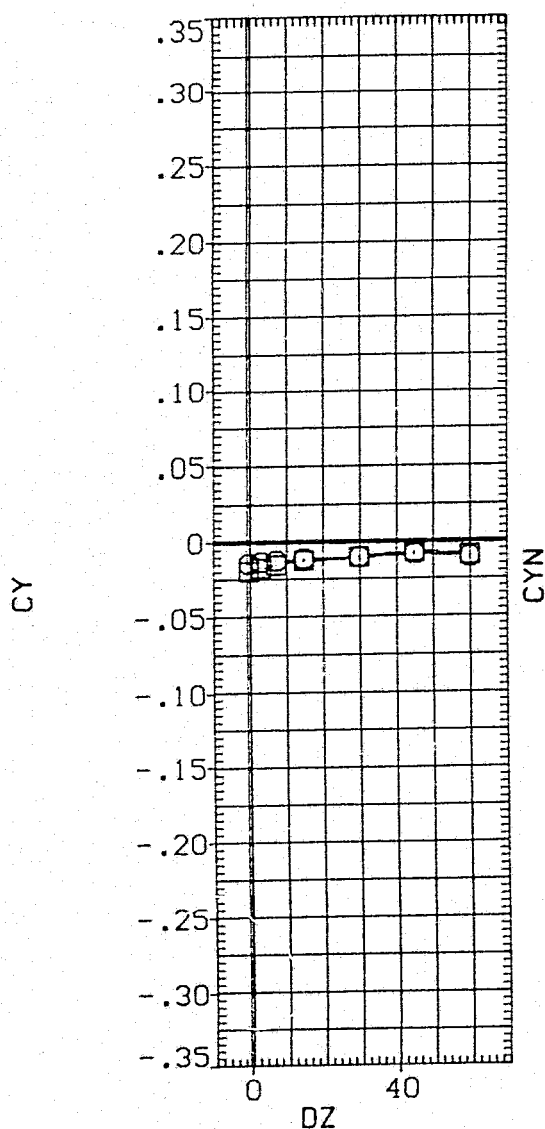


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB
○	10.000			3.000
□	14.000			.600
		ELEVON	5.000	MACH
		BETA0	.000	BETAC
		PHI	7.500	DY
		DX	10.000	ALPHAC
				8.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

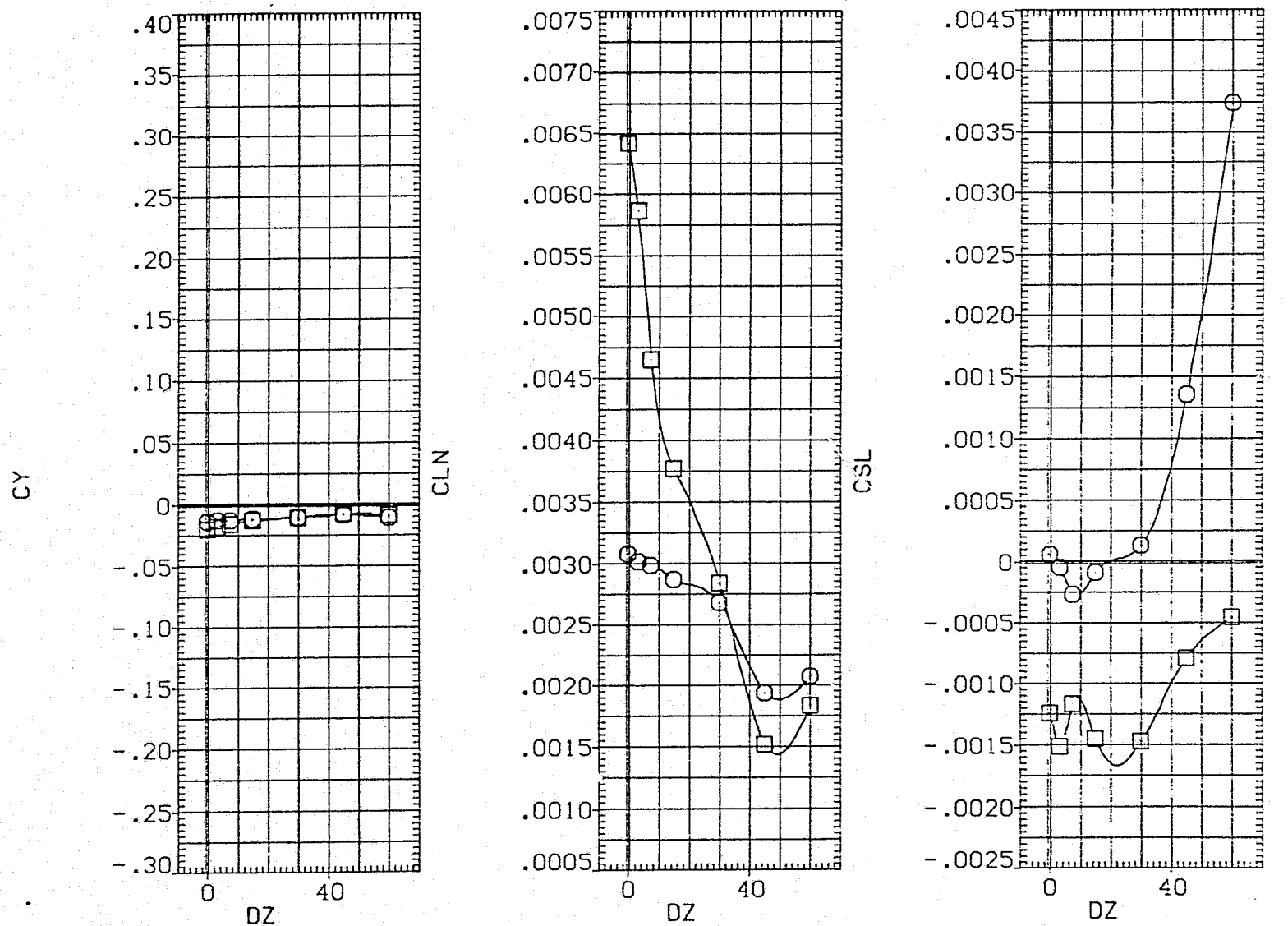


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

BETAC

.000

ELV-0B

3.000

MACH

.600

DX

10.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000

SQ.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

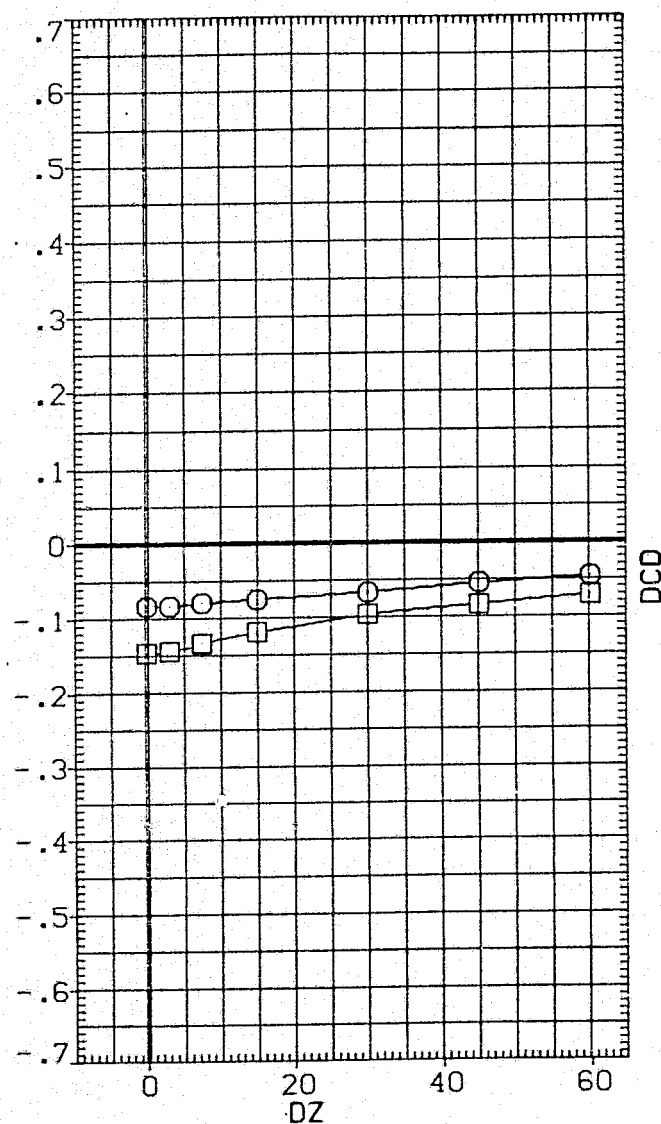
IN.YC

ZMRP 100.8000

IN.ZC

SCALE .0300

DCL



DCD

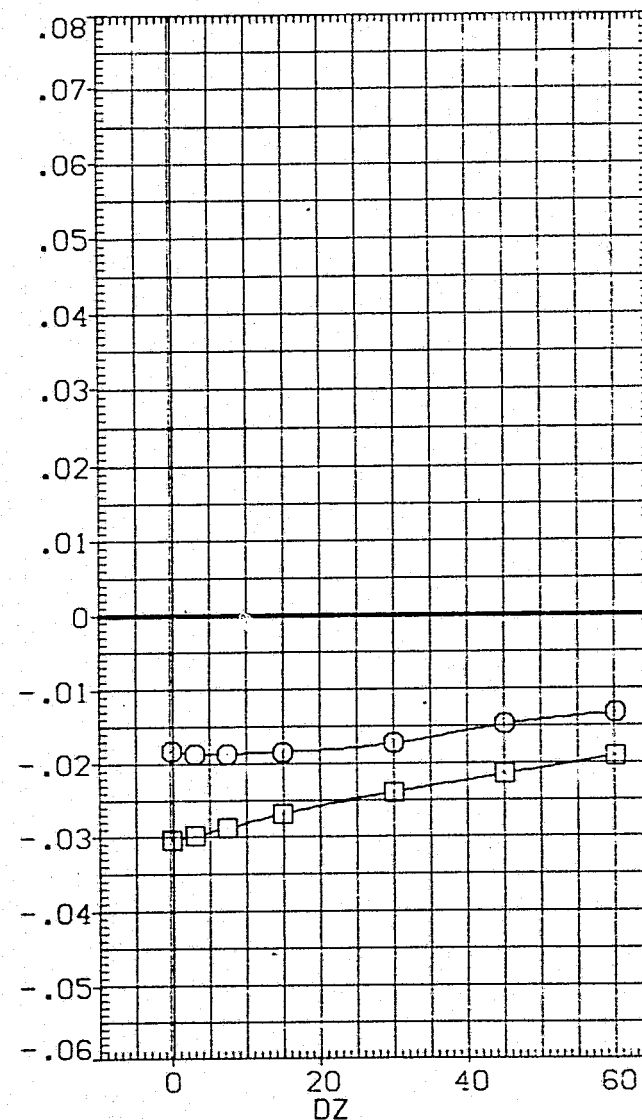


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 (747/1 01 S1) - (747/1)

D/S (087 - 035) (UGN087)

SYMBOL

□
○

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

BETAC

ELV-0B

MACH

DX

BETA0

.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF 5500.0000 SQ. FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN. XC

YMRP .0000 IN. YC

ZMRP 190.8000 IN. ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

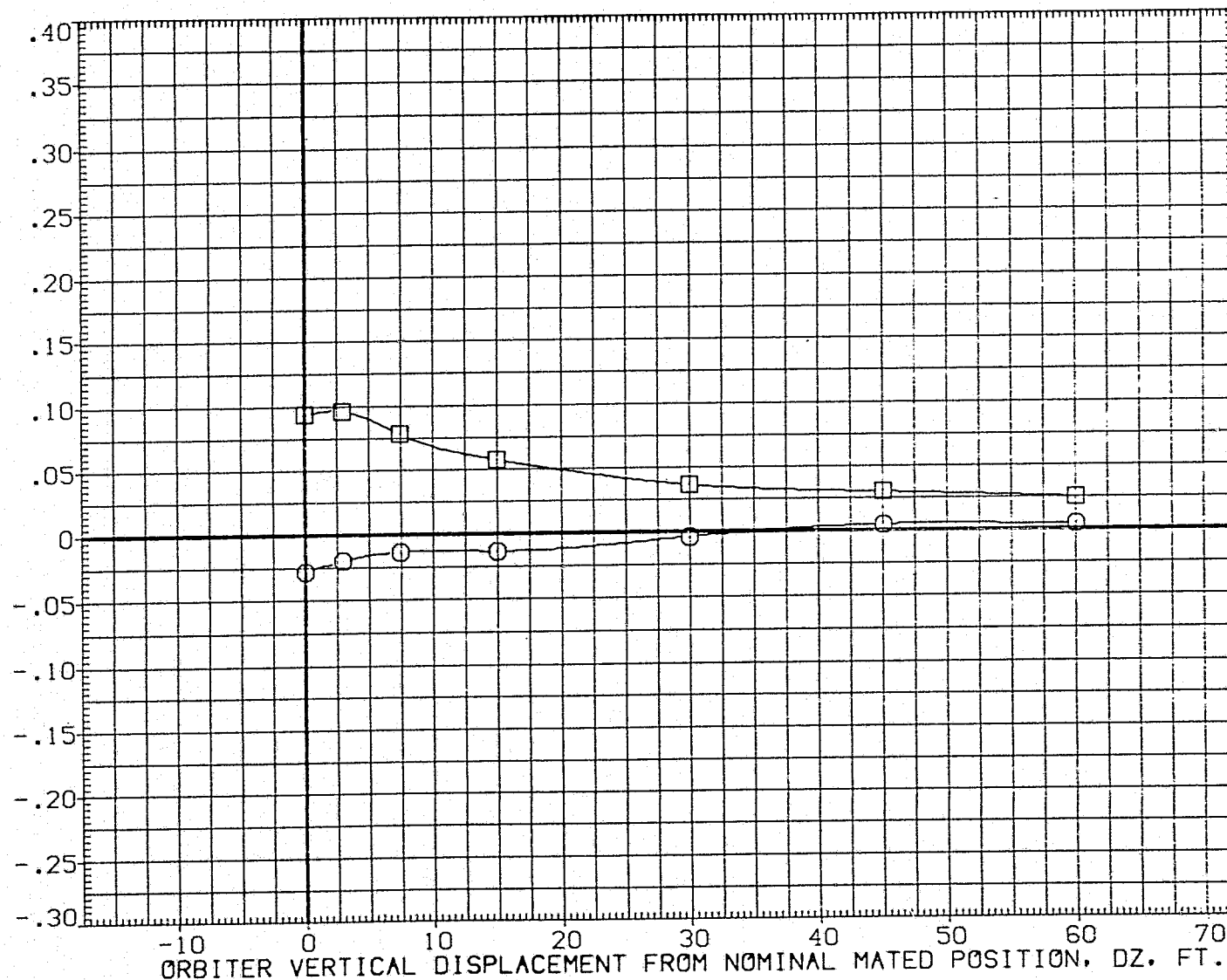


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC 8.000	BETAC .000
□	14.000	ELV-IB .000	ELV-OB 3.000
		ELEVON 5.000	MACH .600
		PHI 7.500	DX 10.000
		DY .000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

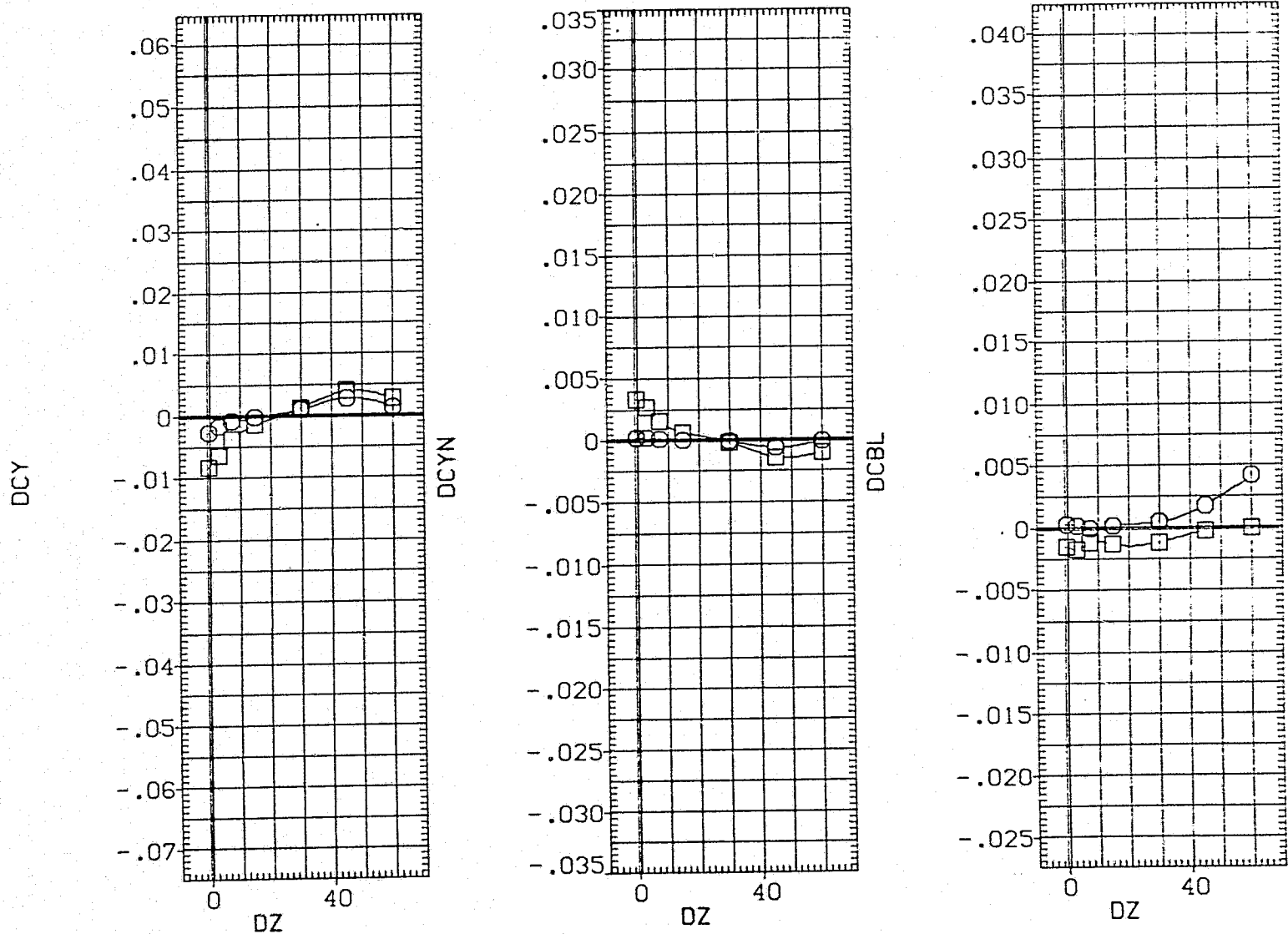


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	10.000
		DY	.000	BETA0	.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

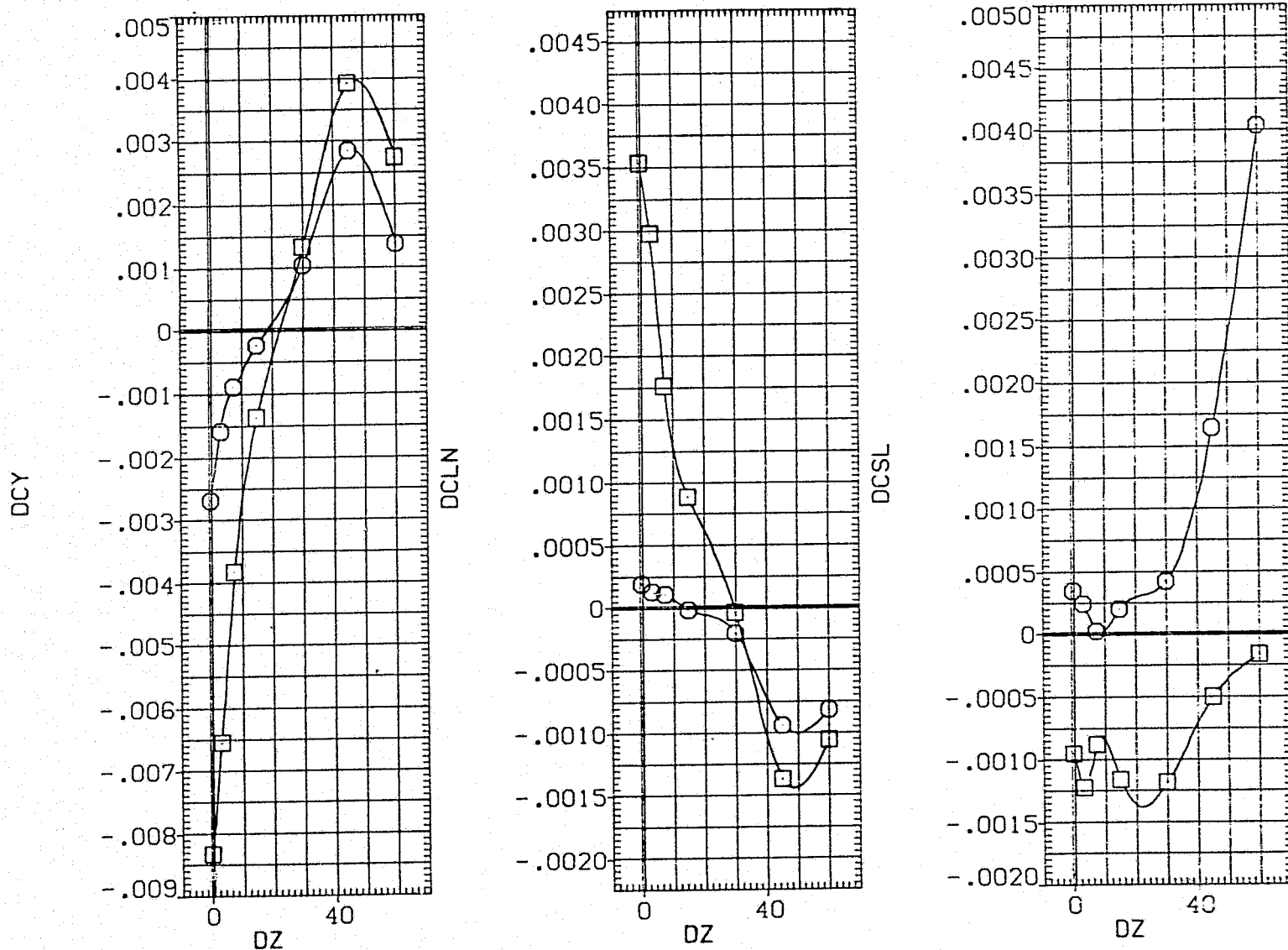


FIG 25 : VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
VMRP	1339.9000	IN.YC
VMRP	.0000	IN.YC
ZMRP	190.8000	IN.YC
SCALE	.0300	

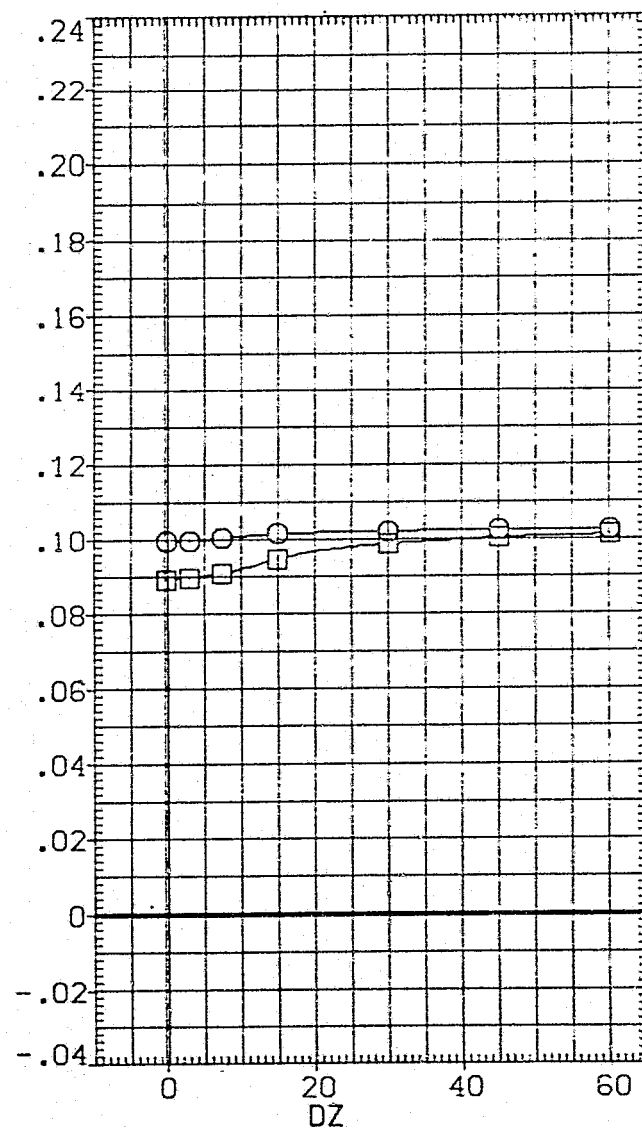
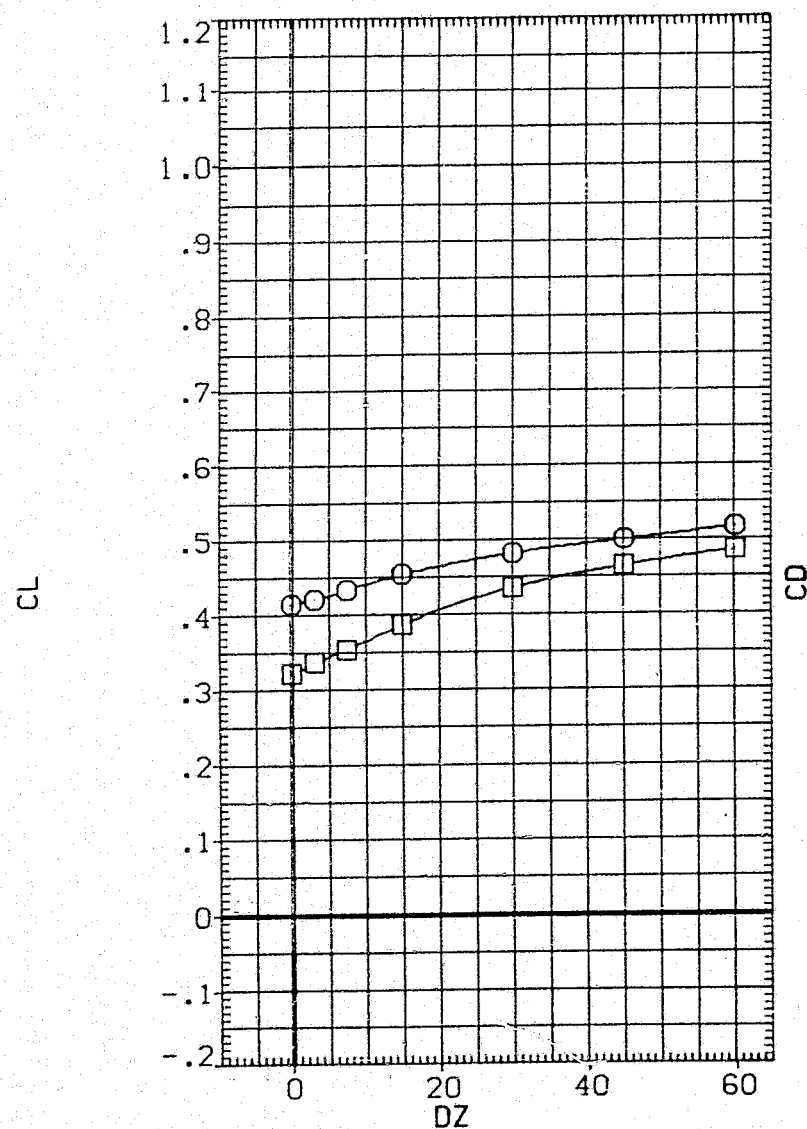


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-IB

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

.000

ELV-OB

MACH

BETAC

DY

ALPHAC

3.000

.600

.000

10.000

4.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

PITCHING MOMENT COEFFICIENT, CLM

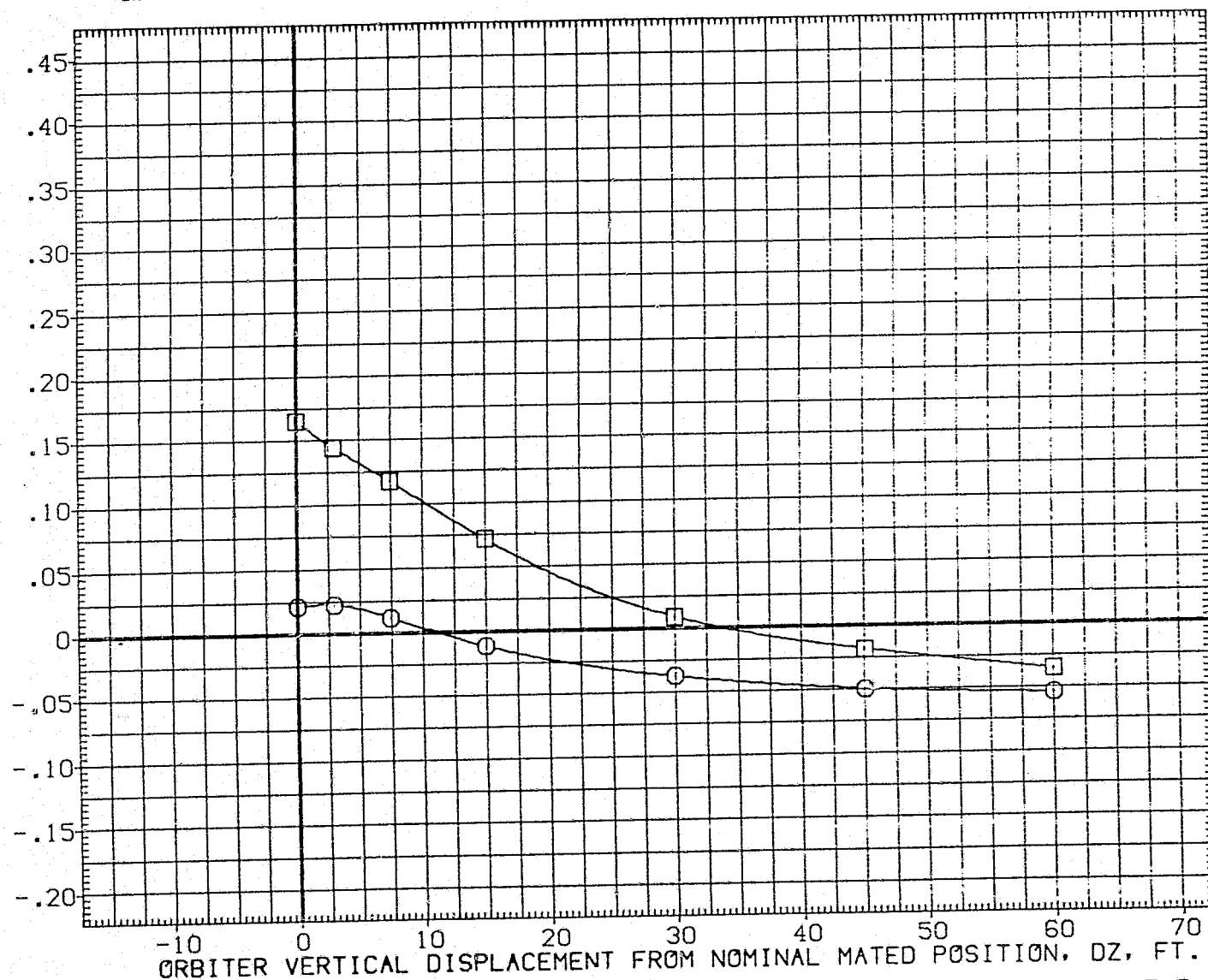


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGNO 5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC .000
		PHI 7.500 DY 10.000
		DX .000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.8000	IN. ZC
SCALE	.0300	

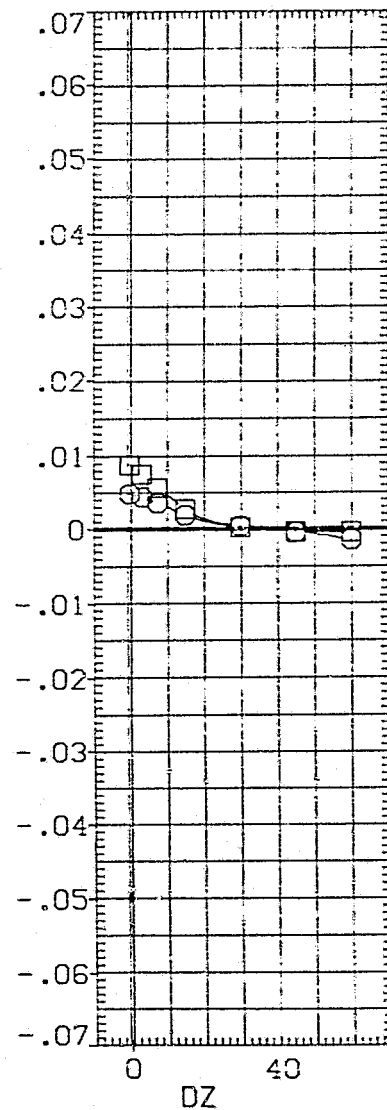
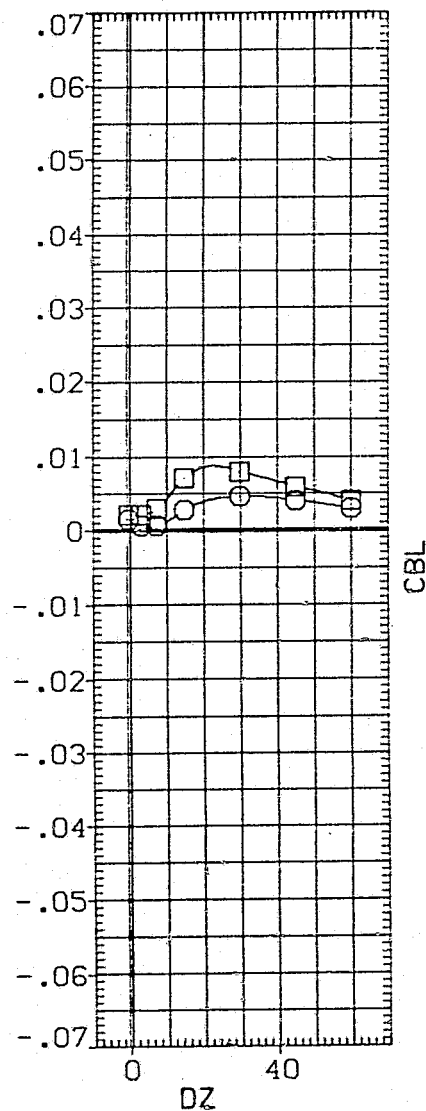
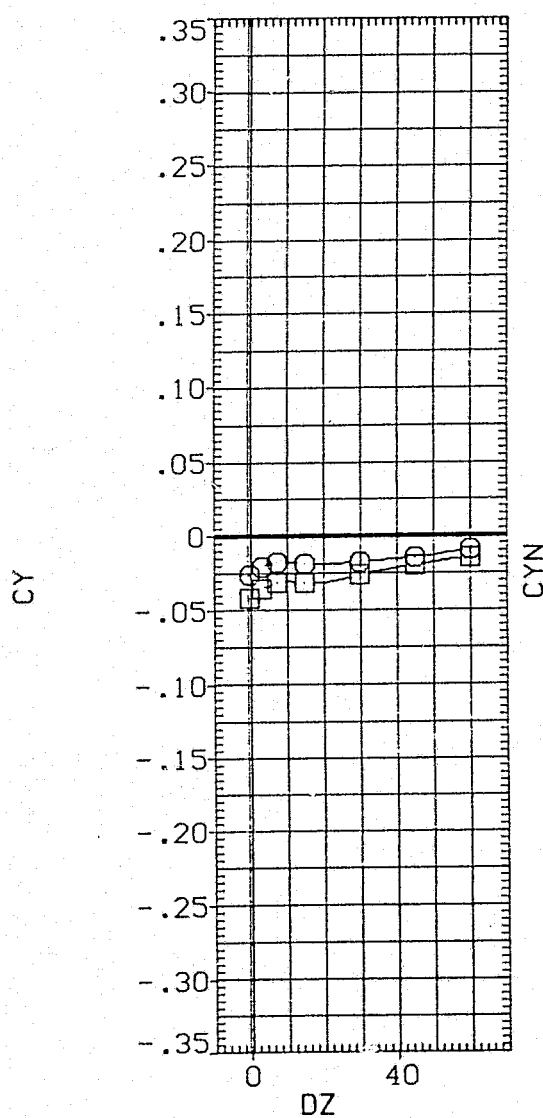


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○

□

ALPHA0

10.000

14.000

ELV-1B

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

.000

10.000

4.000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

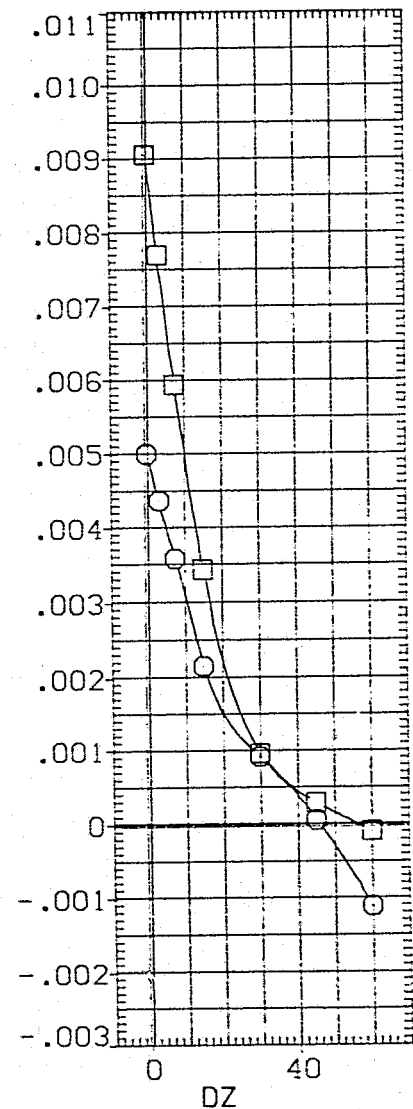
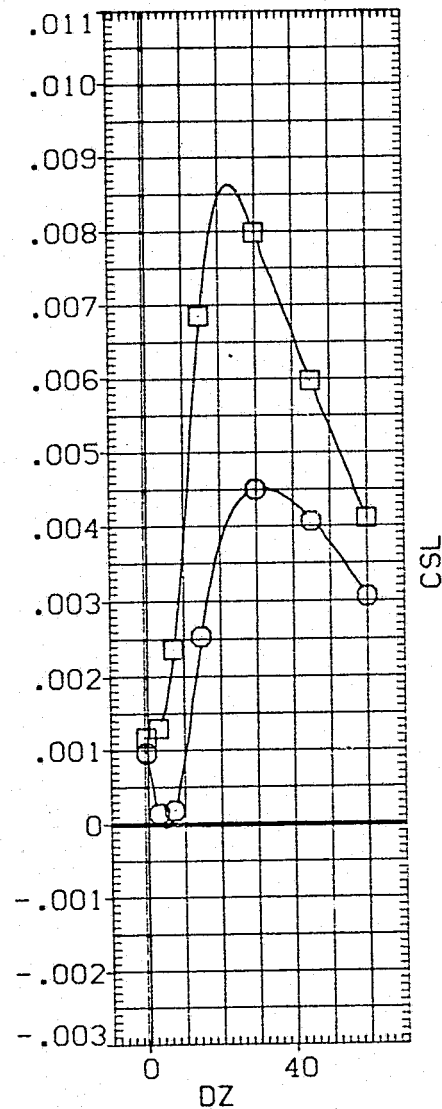
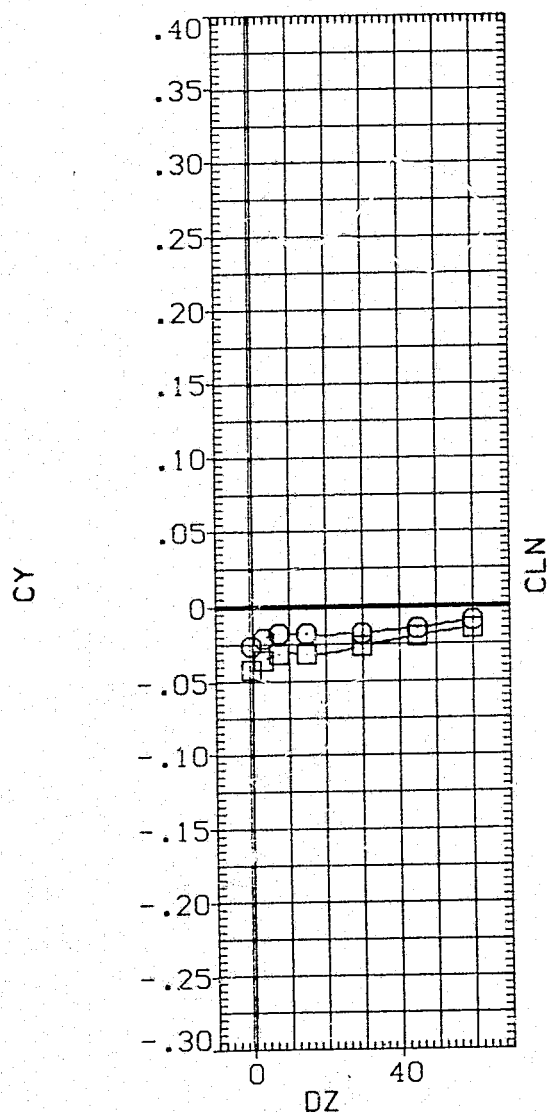


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

.000

ELV-1B

.000

ELV-0B

3.000

ELEVON

5.000

MACH

.600

PHI

7.500

DX

.000

DY

10.000

BETA0

.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

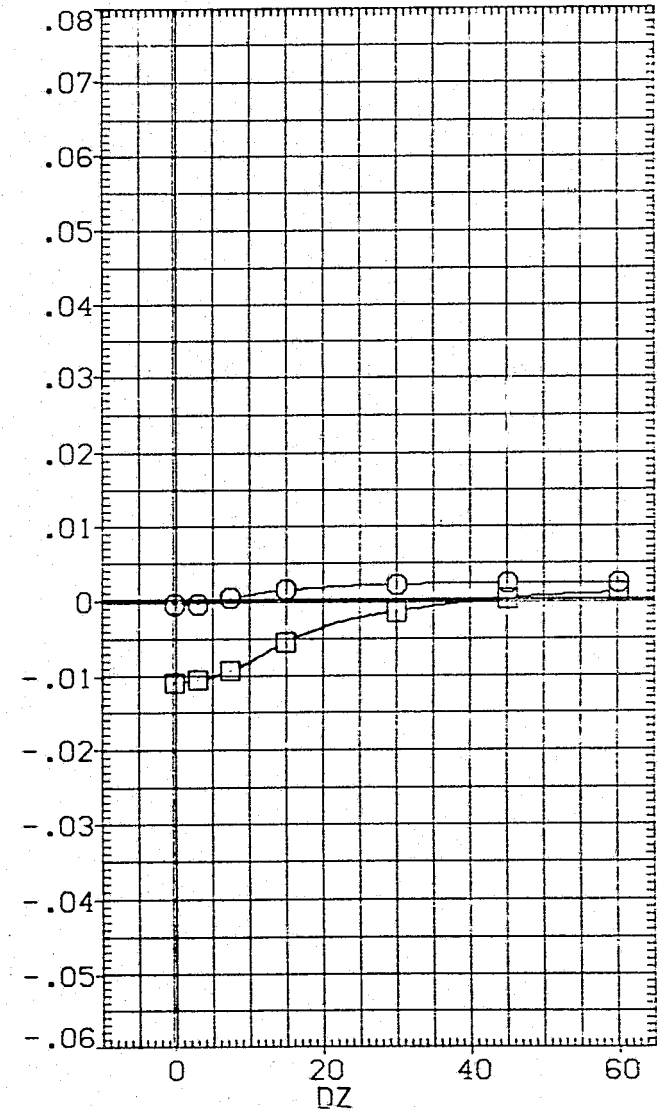
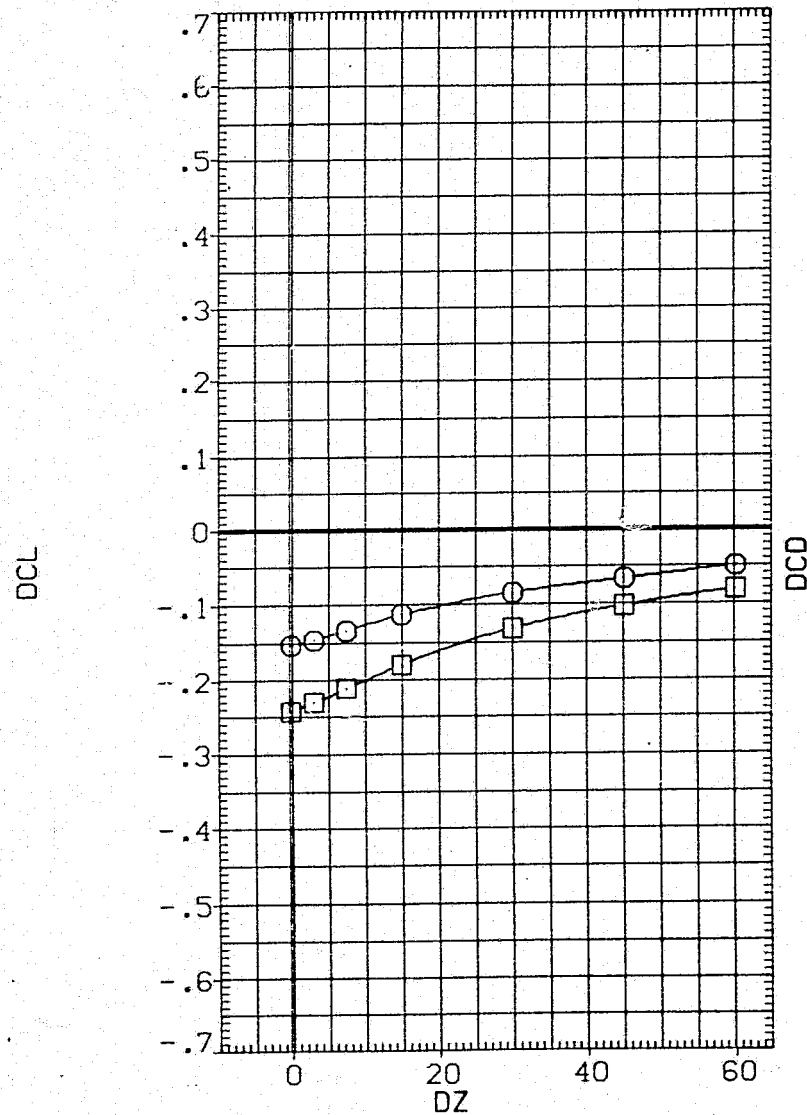


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

.000

ELV-18

.000

ELV-08

3.000

ELEVON

5.000

MACH

.600

PHI

7.500

DX

.000

DY

10.000

BETA0

.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1329.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

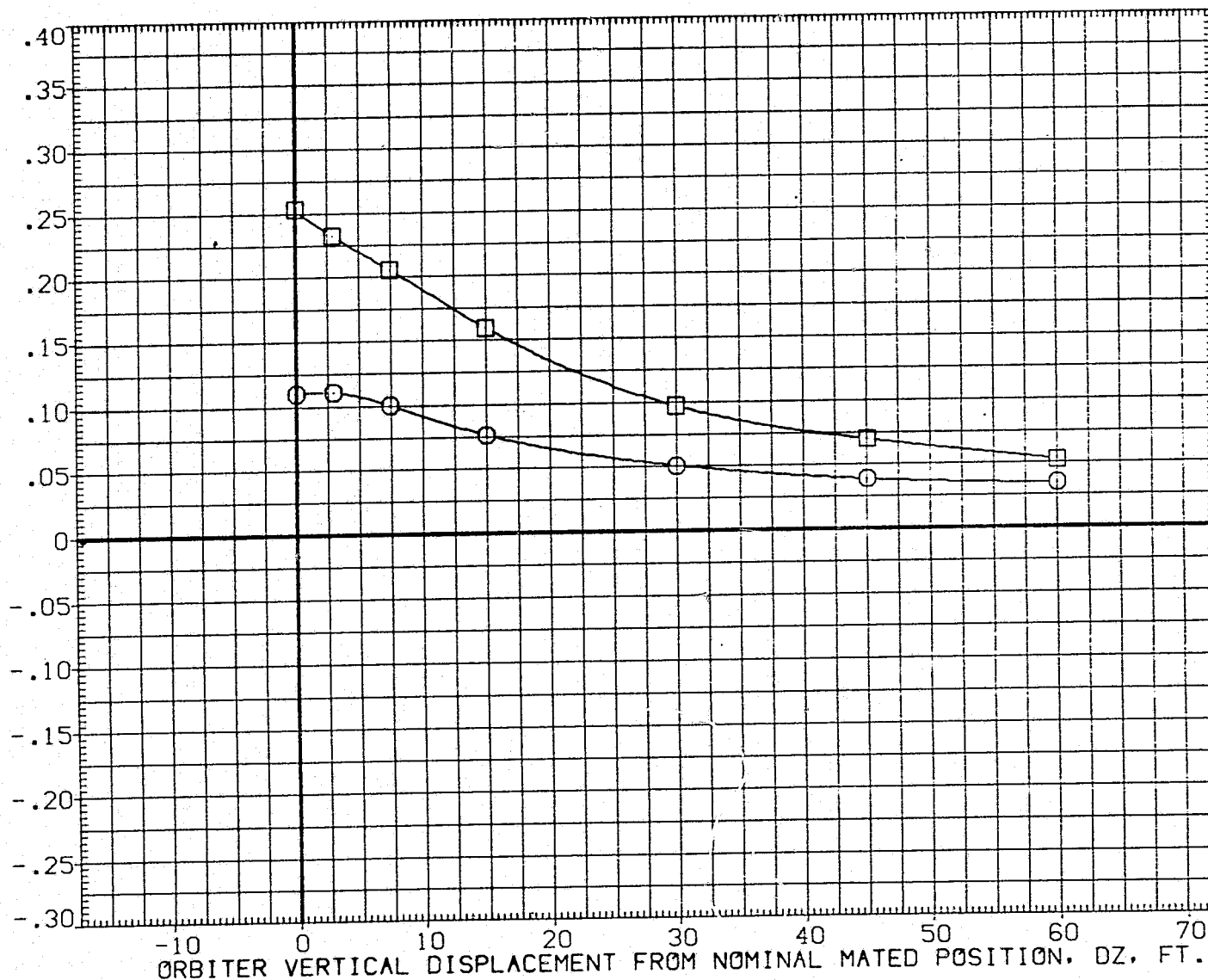


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.AC
YMRP	.0000	IN.VC
ZMRP	190.8000	IN.VC
SCALE	.0000	

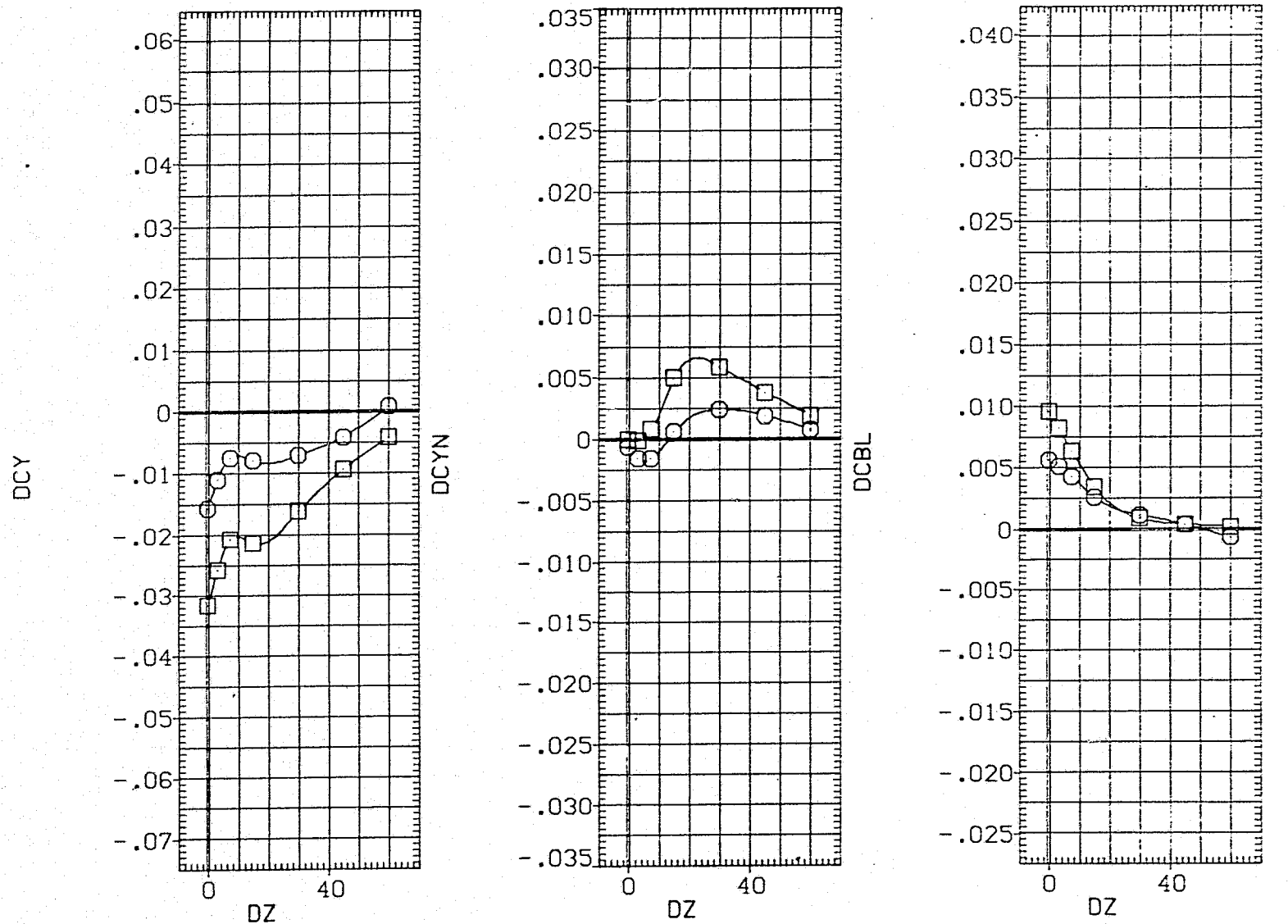


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC 4.000	BETAC .000
□	14.000	ELV-1B .000	ELV-0B 3.000
		ELEVON 5.000	MACH .600
		PHI 7.500	DX .000
		DY 10.000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

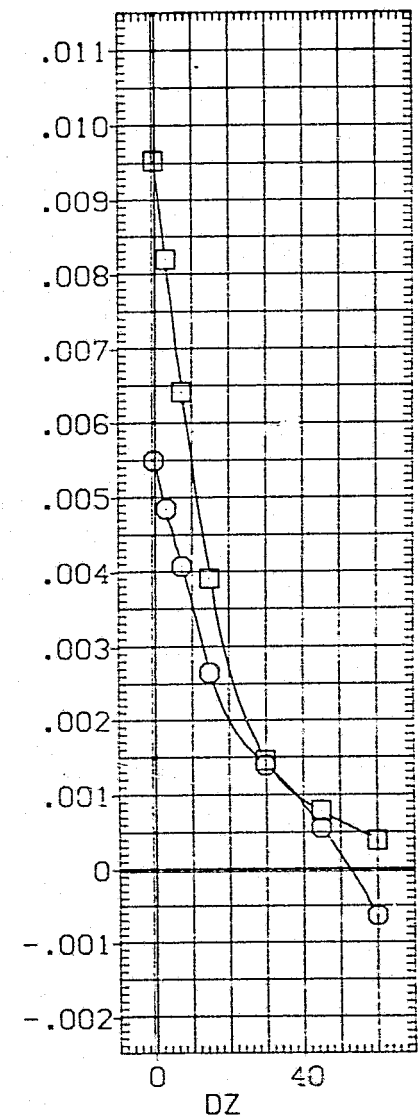
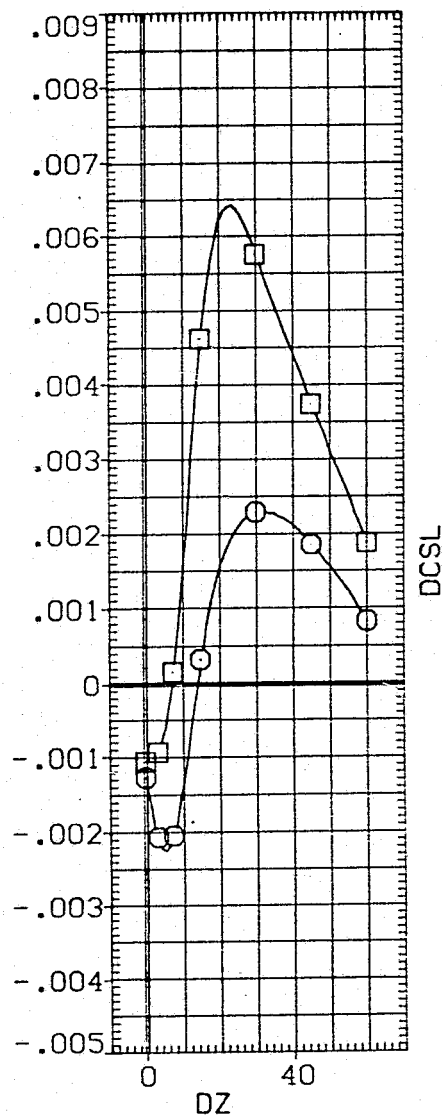
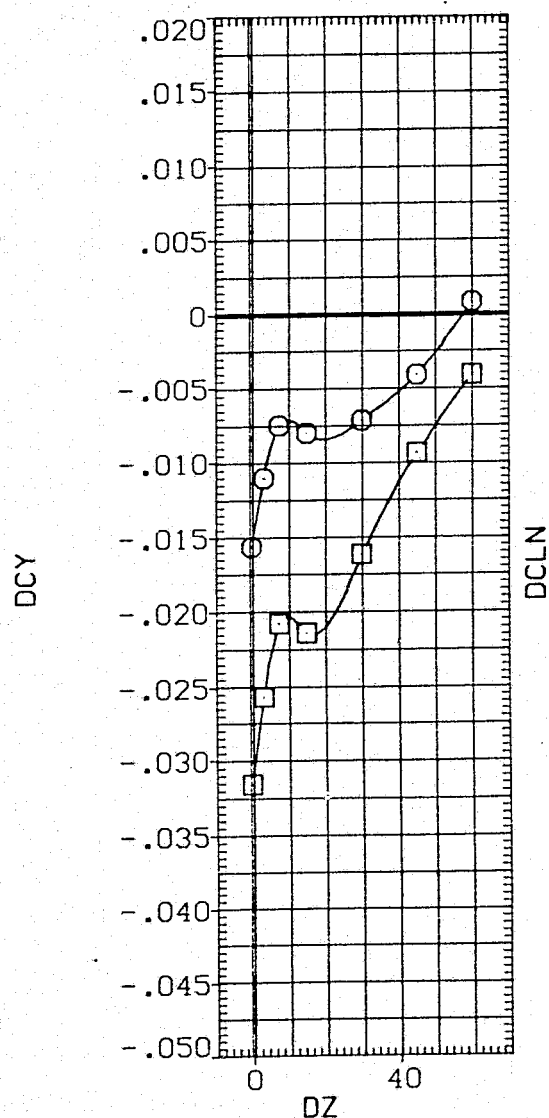


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGNO90)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.009		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
YMRP	1339.9000	IN.YC
ZMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

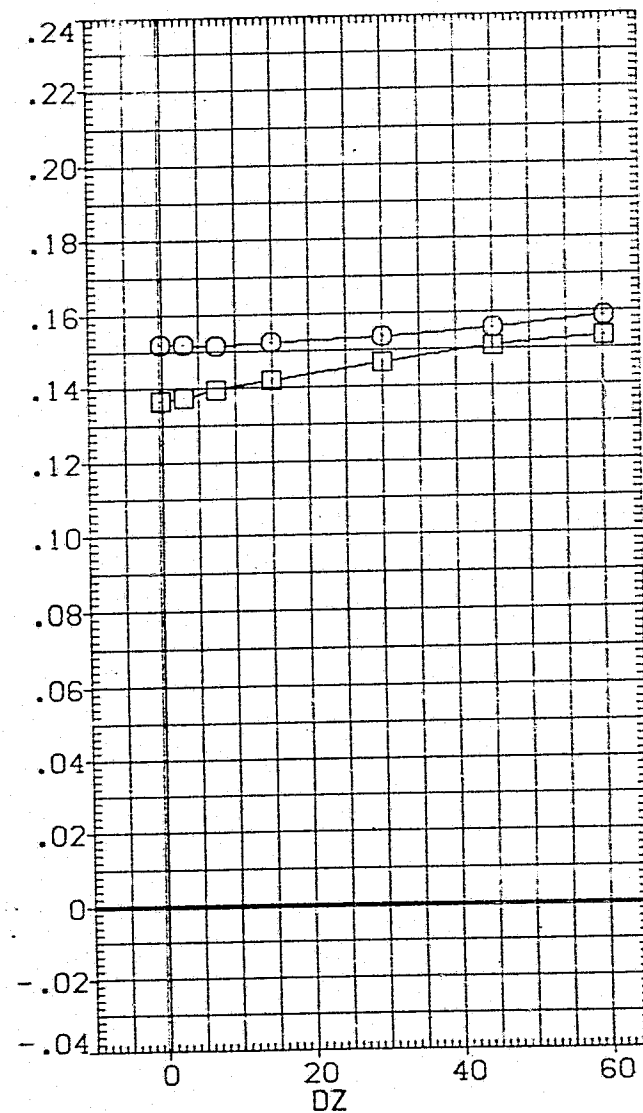
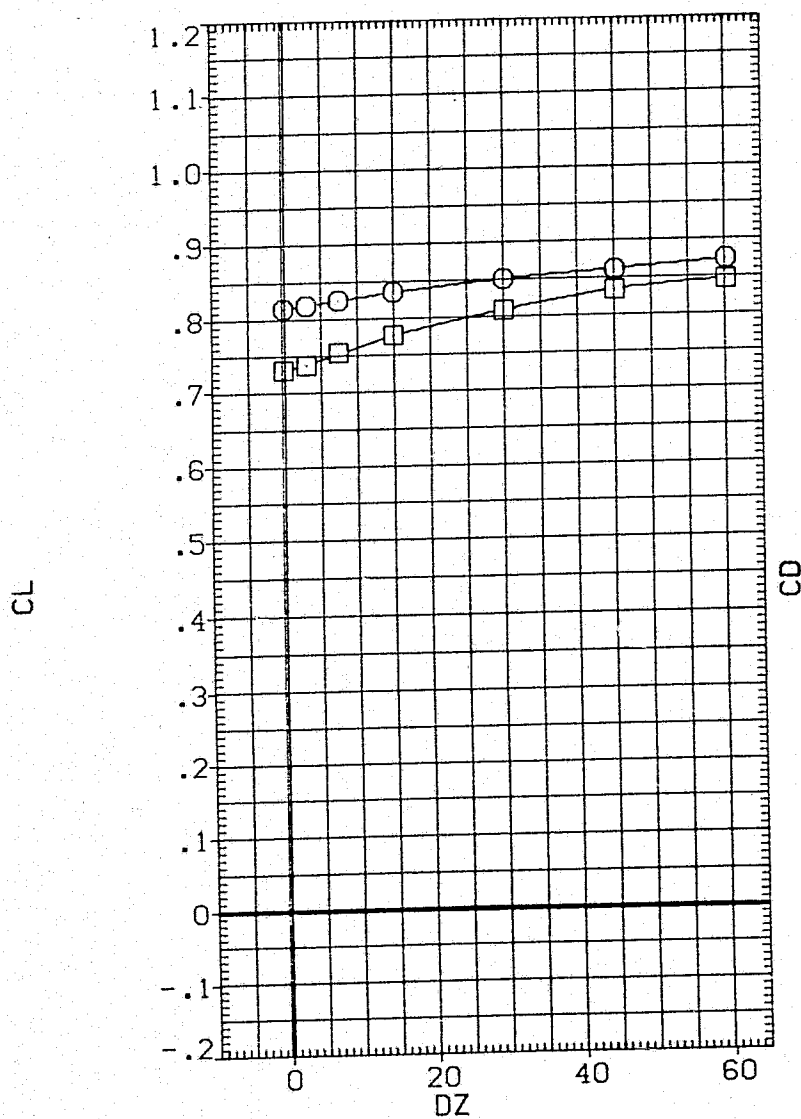


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

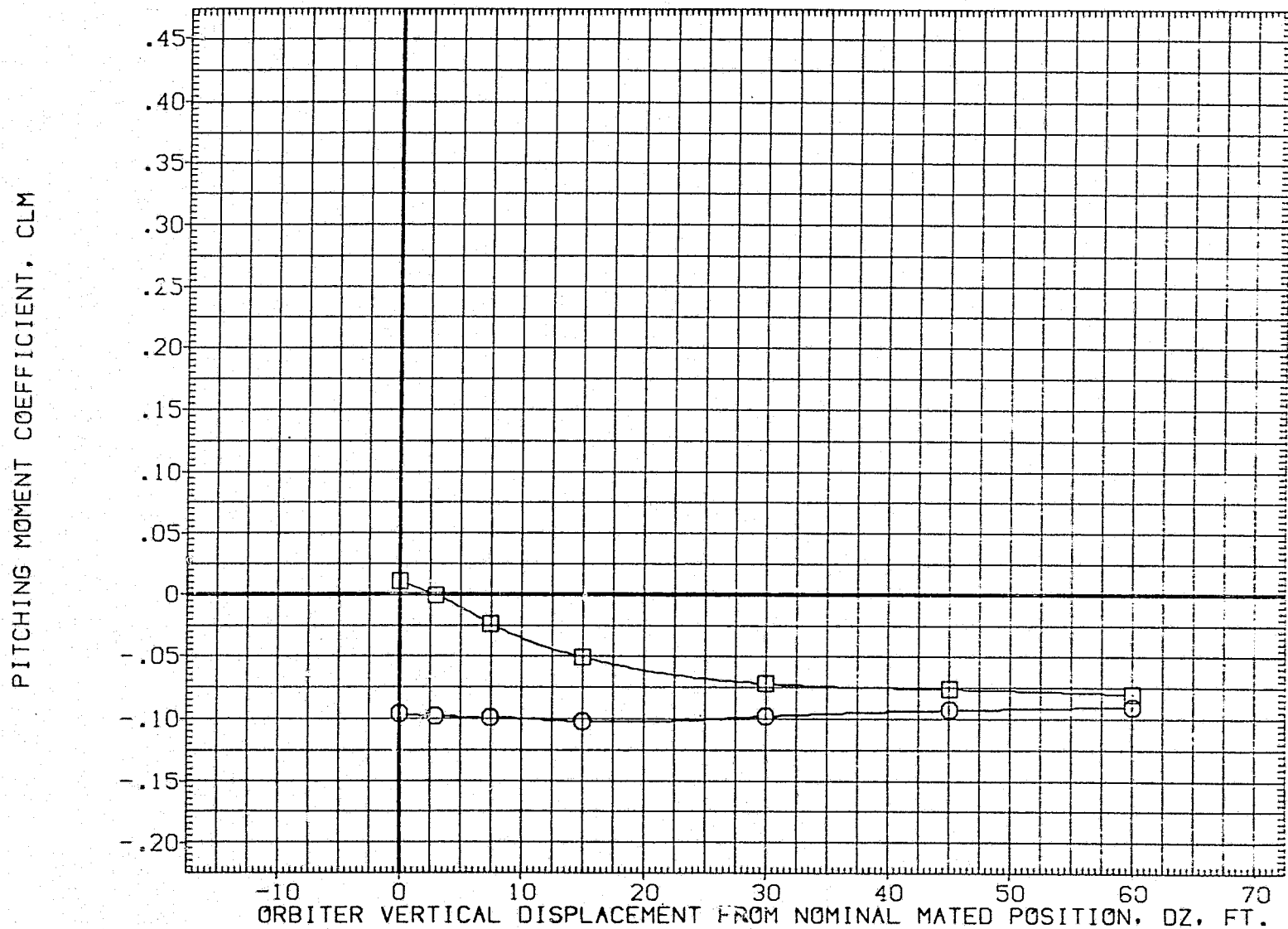


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC .000
		PHI 7.500 DY 10.000
		DX .000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.F.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMPP	1339.9000	IN.YC
YMPP	.0000	IN.YC
ZMPP	190.8000	IN.YC
SCALE	.0300	

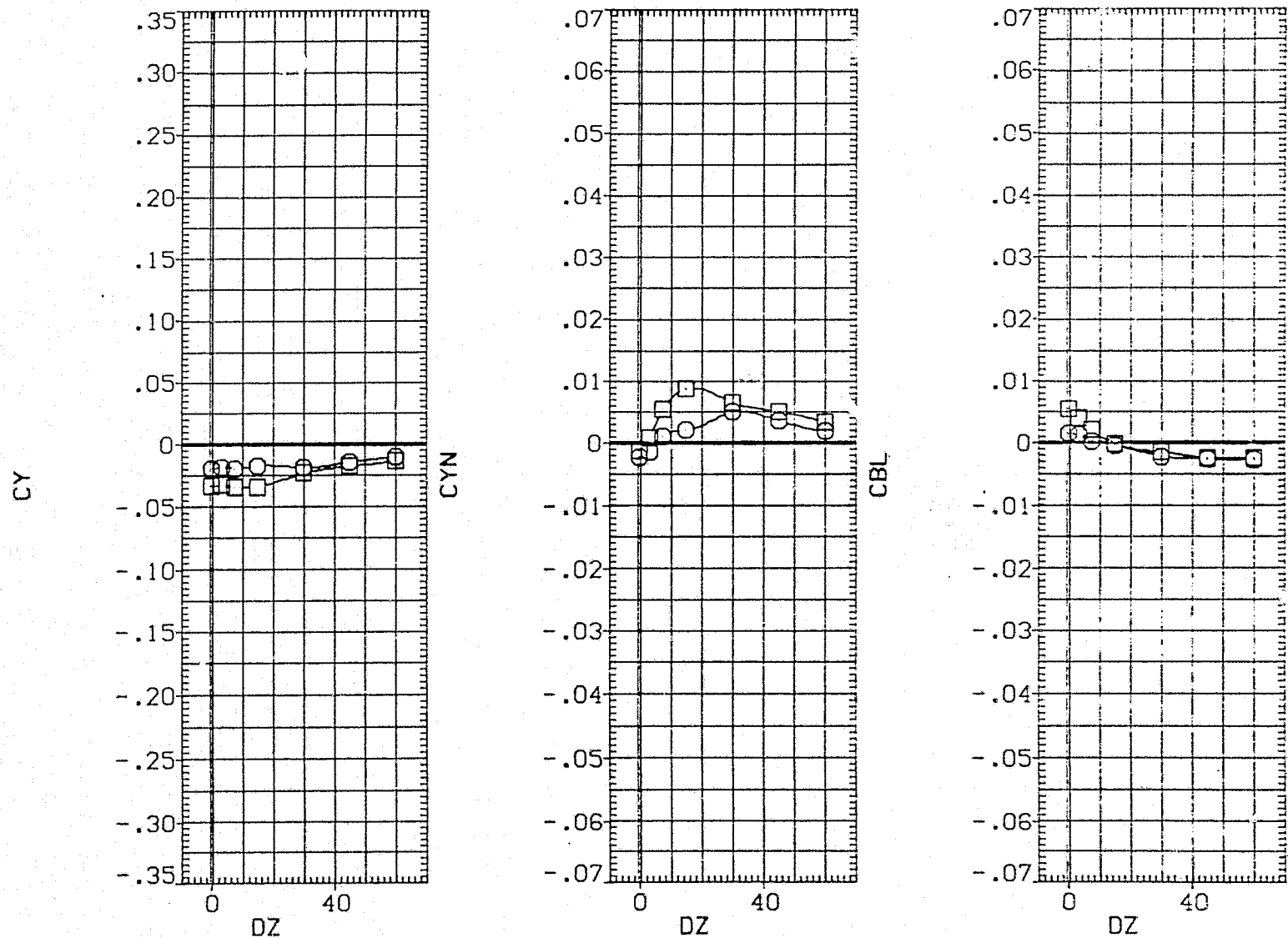


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	7.500	DY	.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

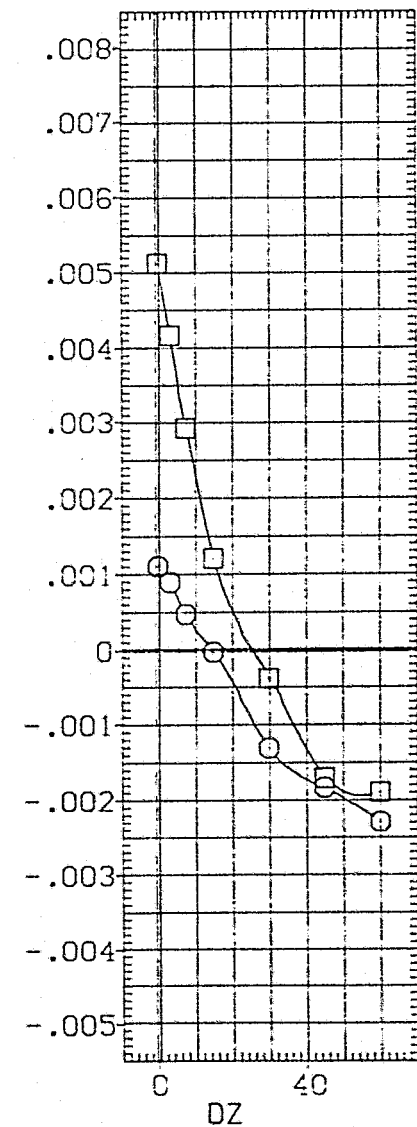
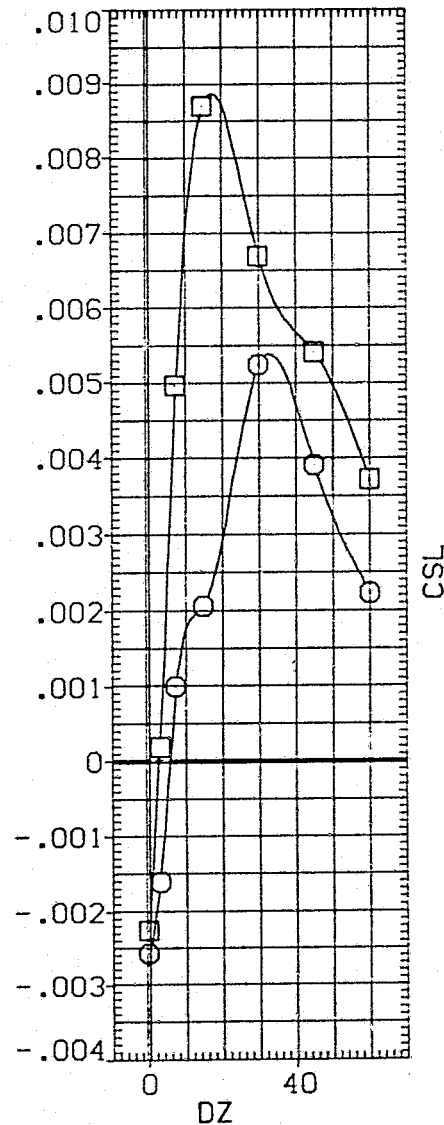
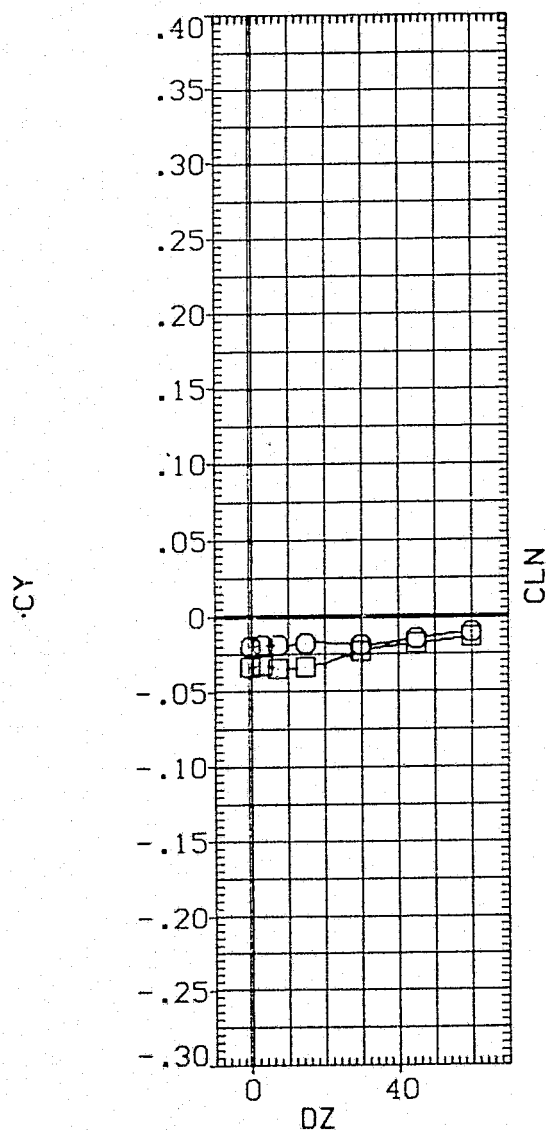


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC .000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX .000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.AC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

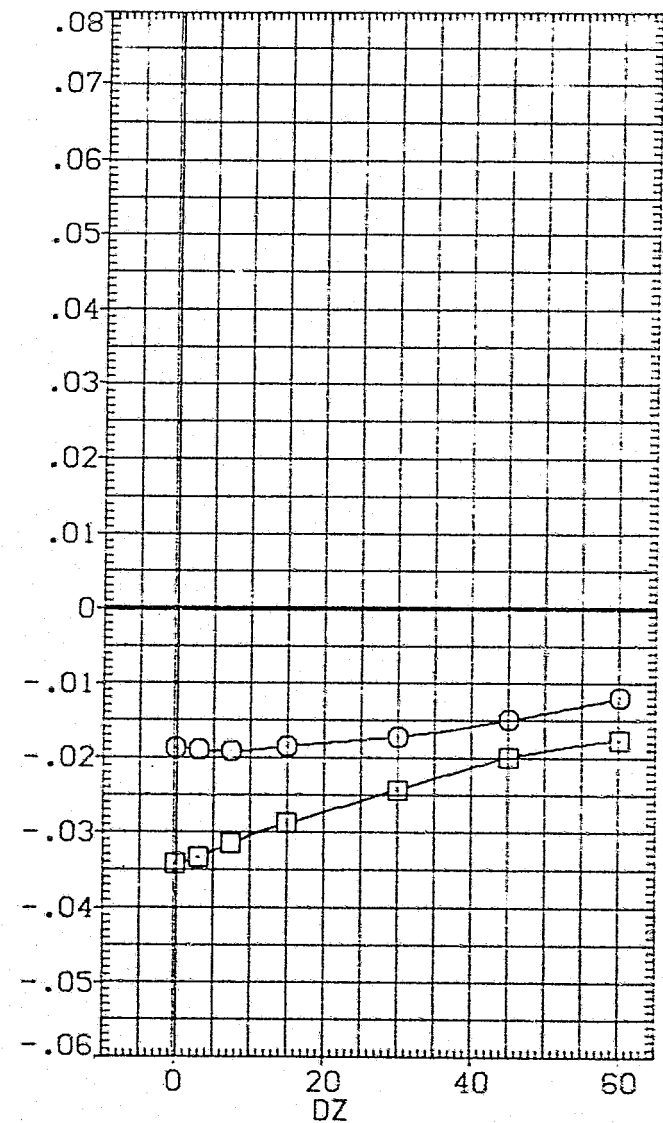
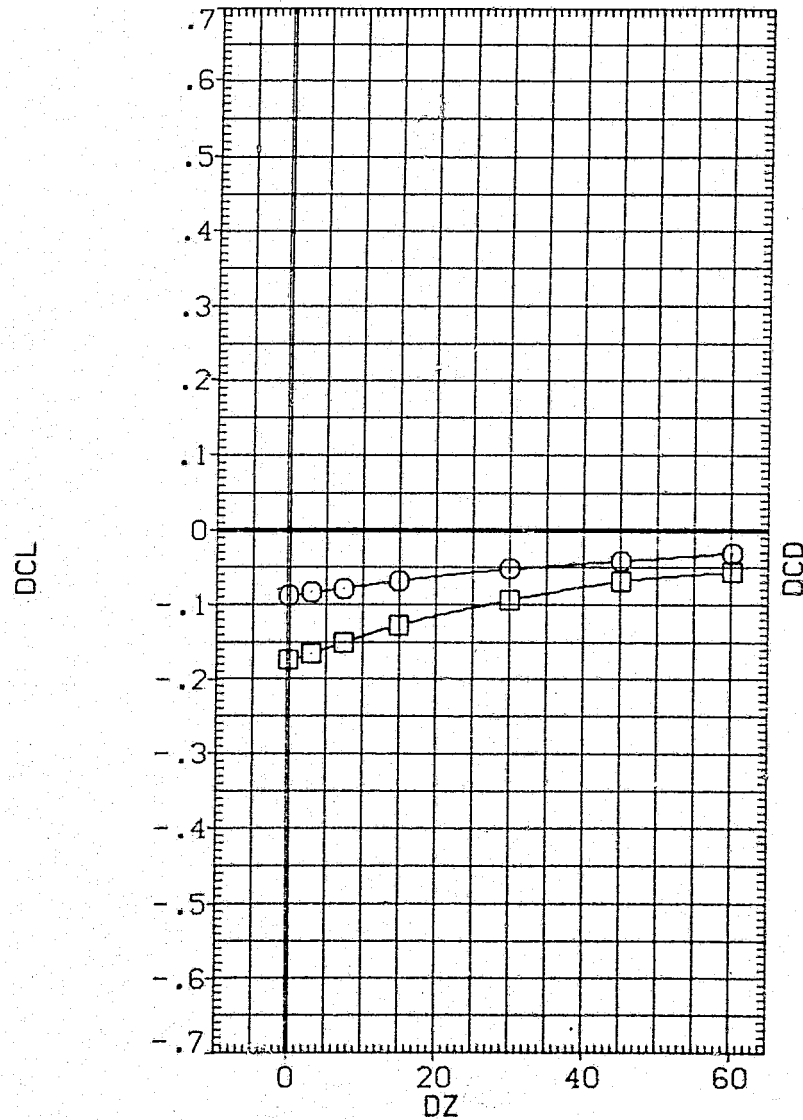


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES				REFERENCE INFORMATION		
		ALPHAC	BETAC	ELV-IB	ELV-OB	SREF	5500.0000	50.FT.
○	10.000	8.000	.000	.000	3.000	LREF	327.7800	IN.
□	14.000	5.000	.600	7.500	.000	BREF	2348.0400	IN.
		PHI	7.500	DX	.000	XMRP	1339.9000	IN.XC
		DY	10.000	BETA0	.000	YMRP	.0000	IN.YC
						ZMRP	190.8000	IN.ZC
						SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

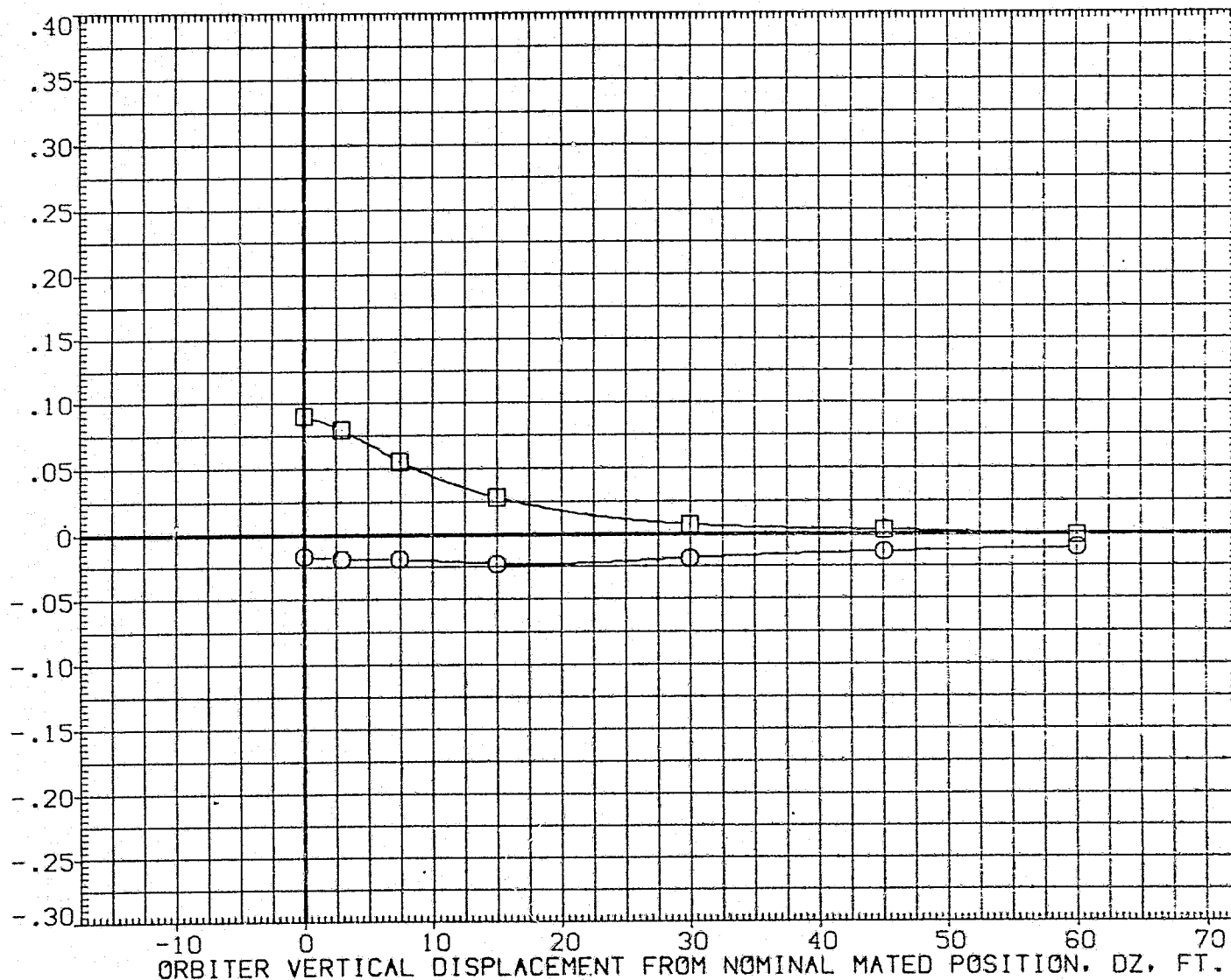


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC .000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX .000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
YMRP	1339.0000	IN.XC
ZMRP	.0000	IN.YC
SCALE	100.8000	IN.ZC

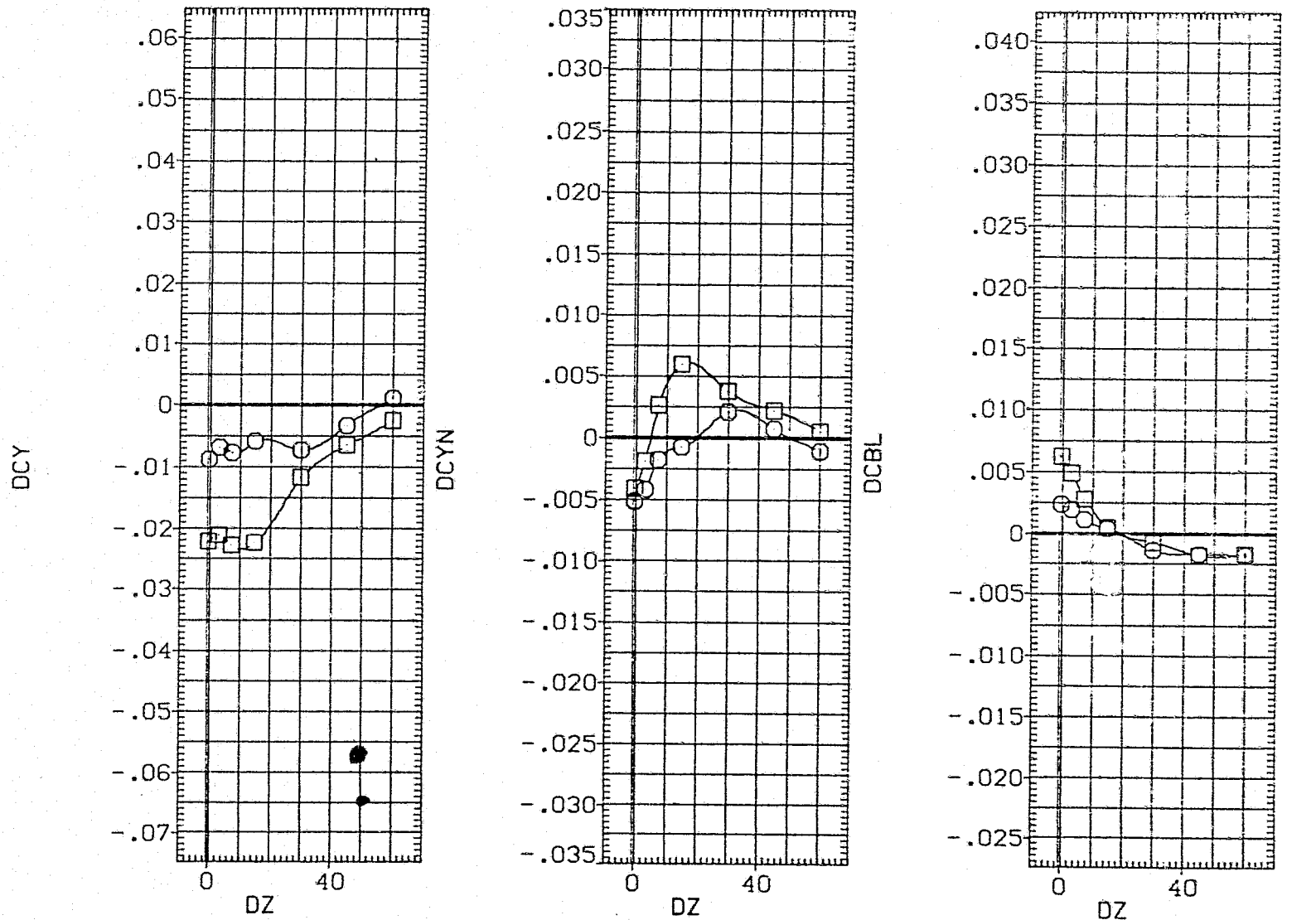


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES		
○	10.000	ALPHAC	8.000	BETAC
□	14.000	ELV-1B	.000	ELV-0B
		ELEVON	5.000	MACH
		PHI	7.500	DX
		DY	10.000	BETA0

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.6000	IN.ZC
SCALE	.0300	

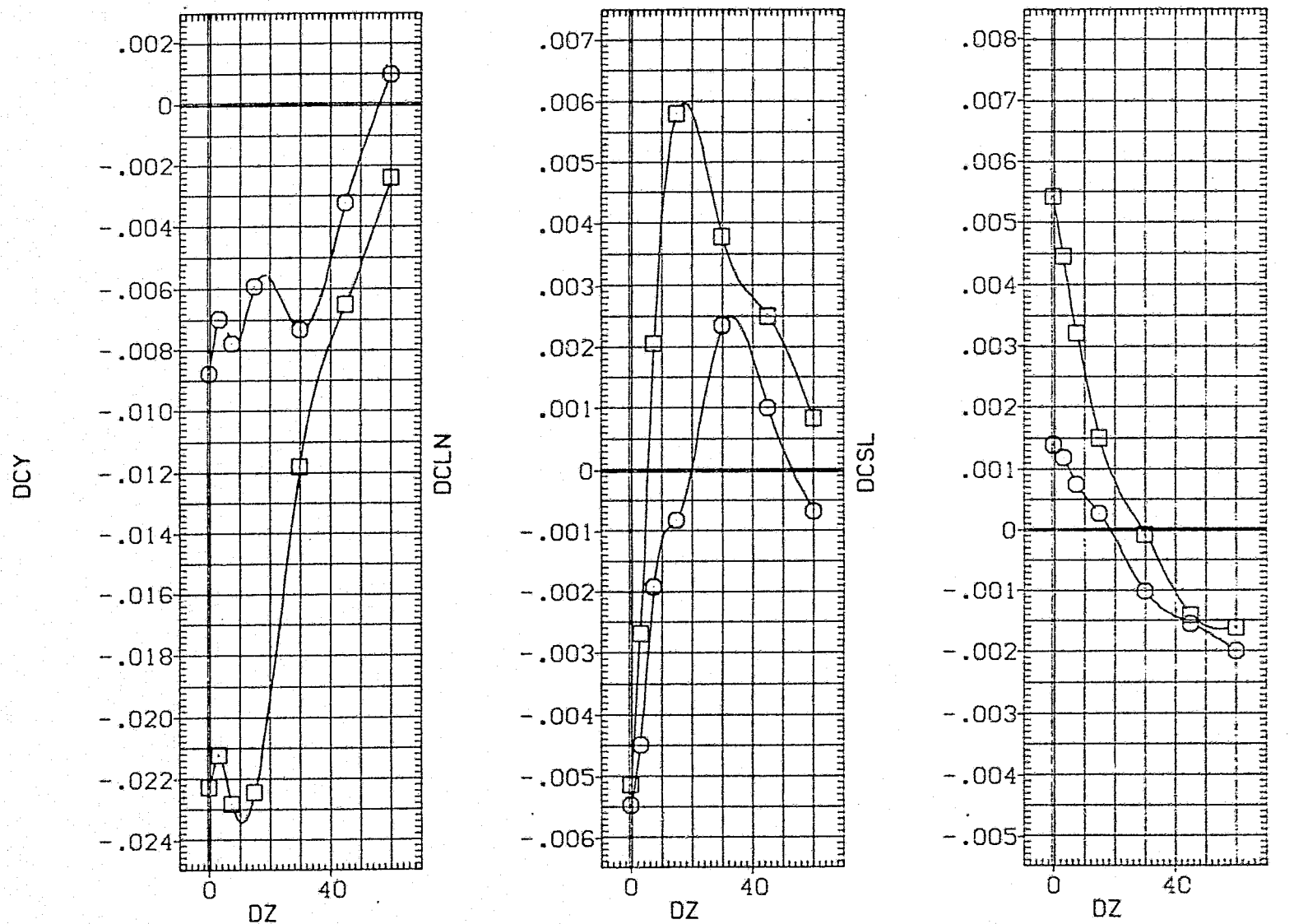


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC .000
		PHI 7.500 DY 10.000
		DX 10.000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	50. FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN. XC
YMRP	.0000	IN. YC
ZMRP	190.8000	IN. ZC
SCALE	.0300	

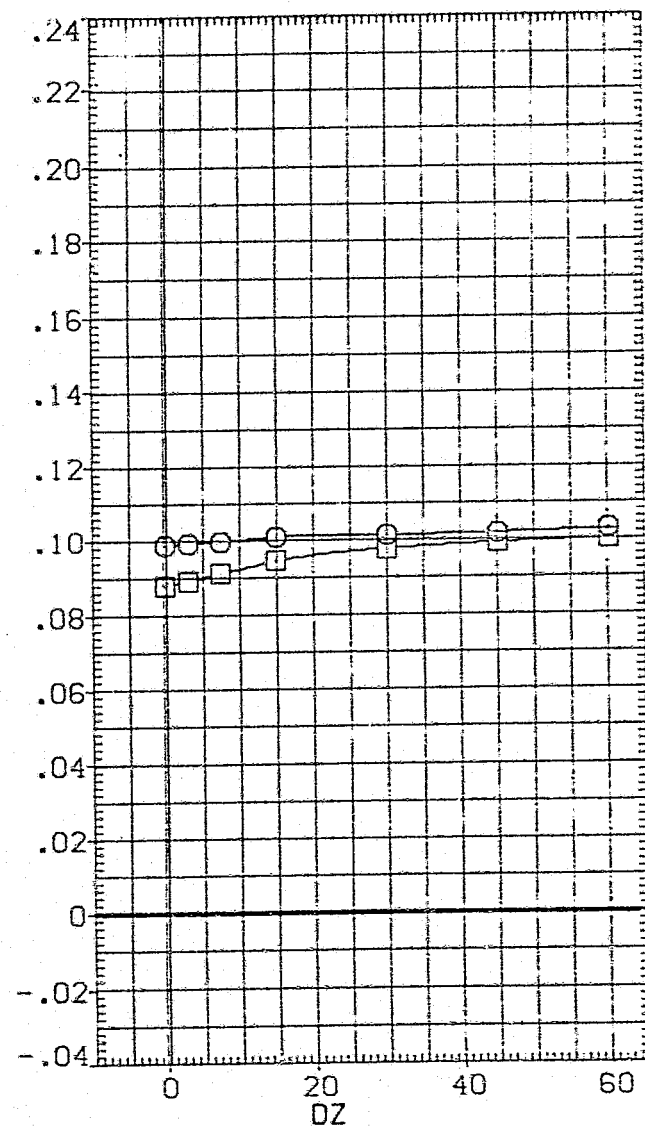
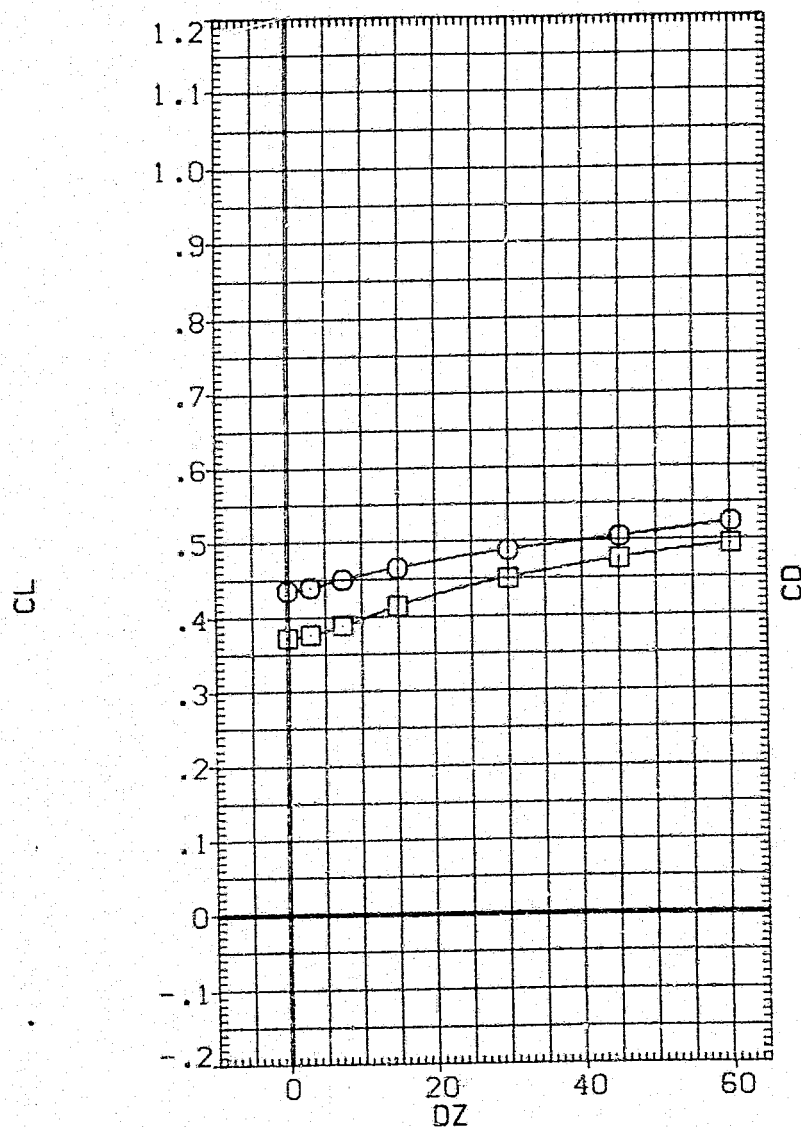


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

ELV-1B

14.000

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

ELV-0B

3.000

MACH

.600

BETAC

.000

DY

10.000

ALPHAC

4.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

PITCHING MOMENT COEFFICIENT, CLM

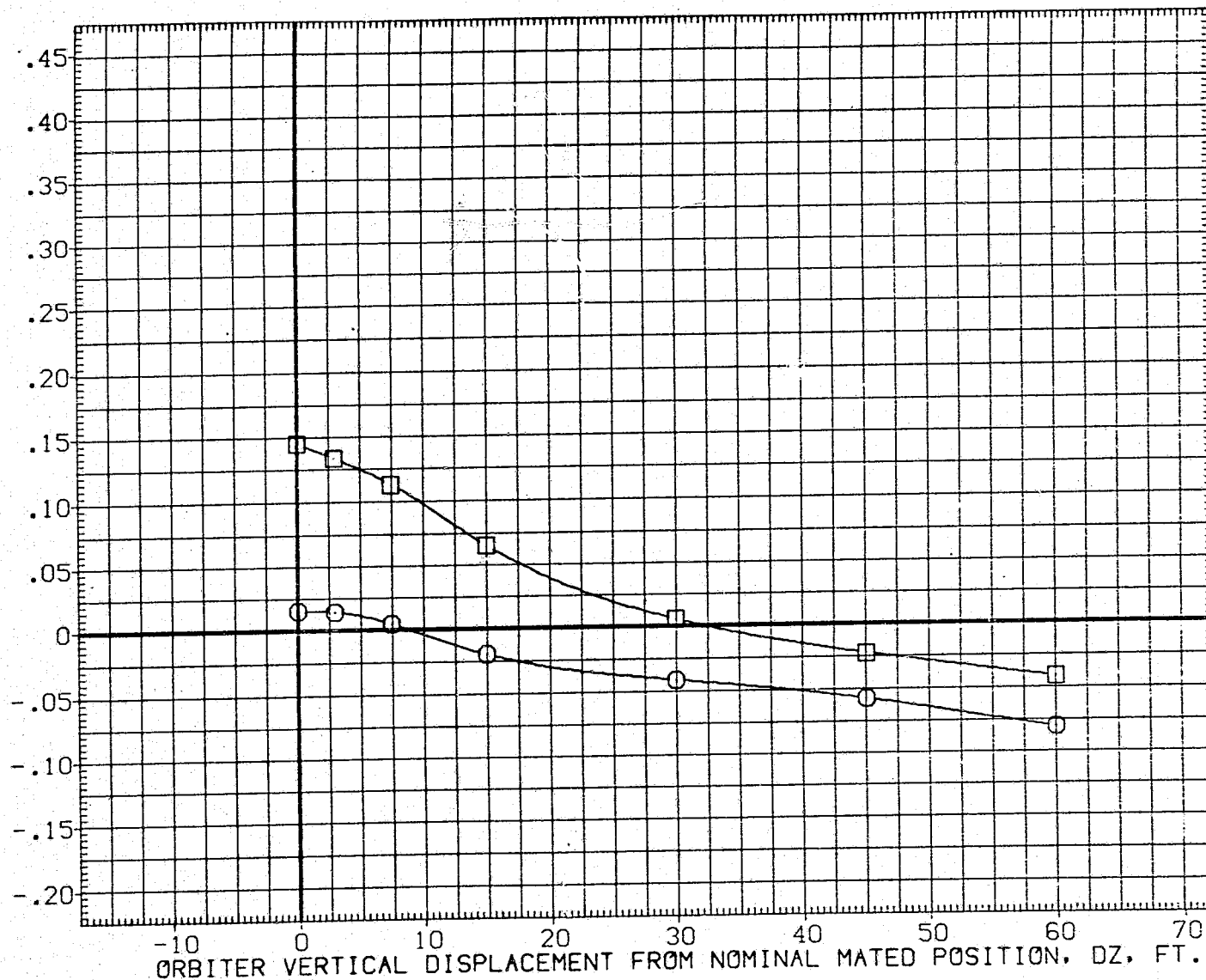


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB	
○	10.000		.000	3.000	
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	10.000
		DX	10.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRF	1339.9000	IN.AC
YMRF	.0000	IN.YC
ZMRF	190.8000	IN.ZC
SCALE	.0300	

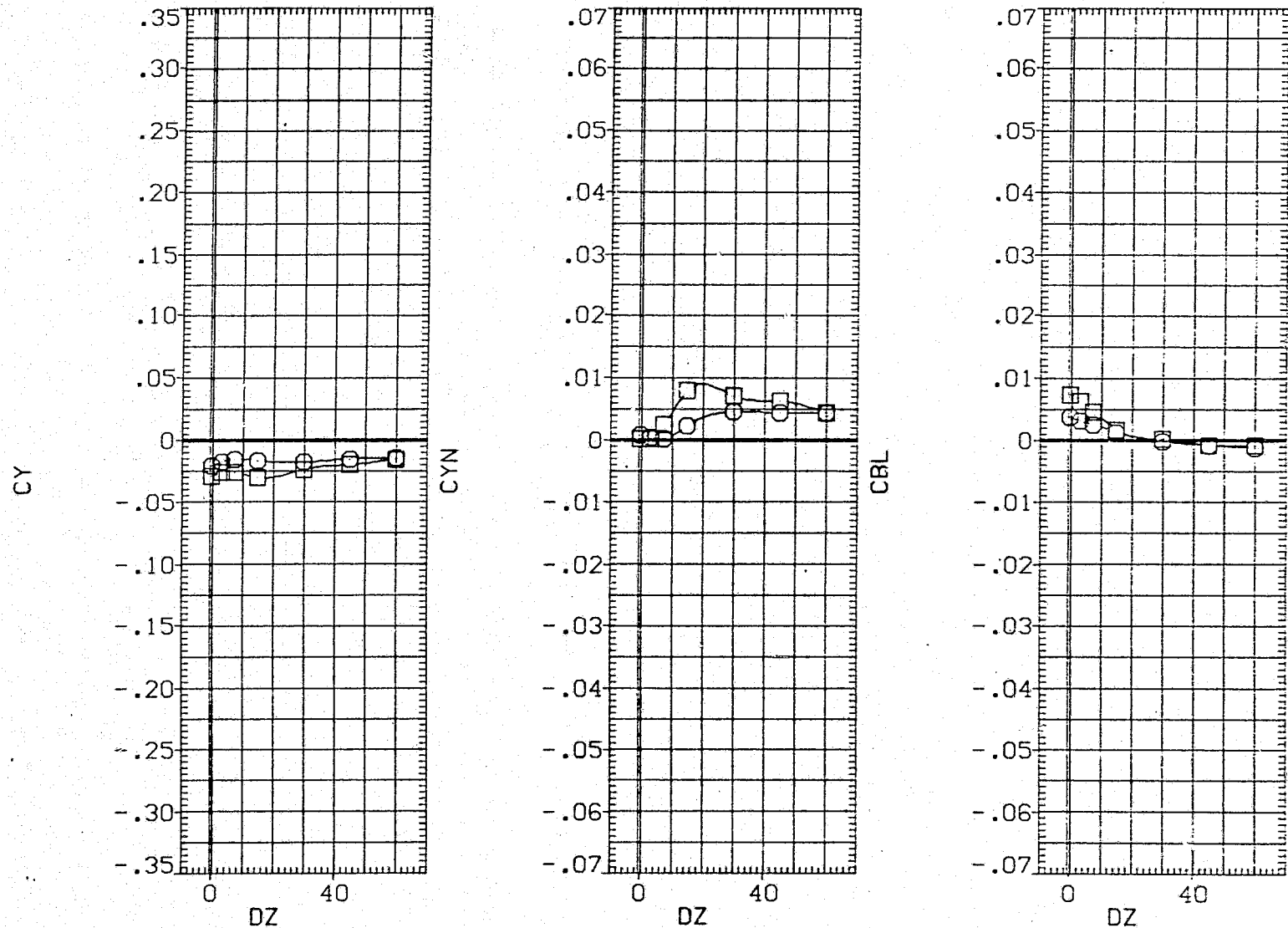


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	VALUES
○	10.000	ELV-1B	.000
□	14.000	ELEVON	5.000
		BETA0	.000
		PHI	7.500
		DX	10.000
		ELV-0B	3.000
		MACH	.600
		BETAC	.000
		DY	10.000
		ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SD.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

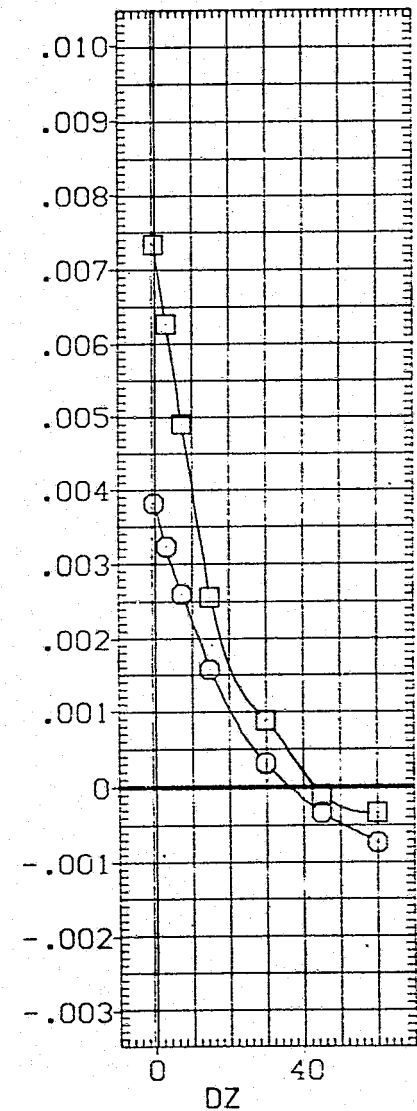
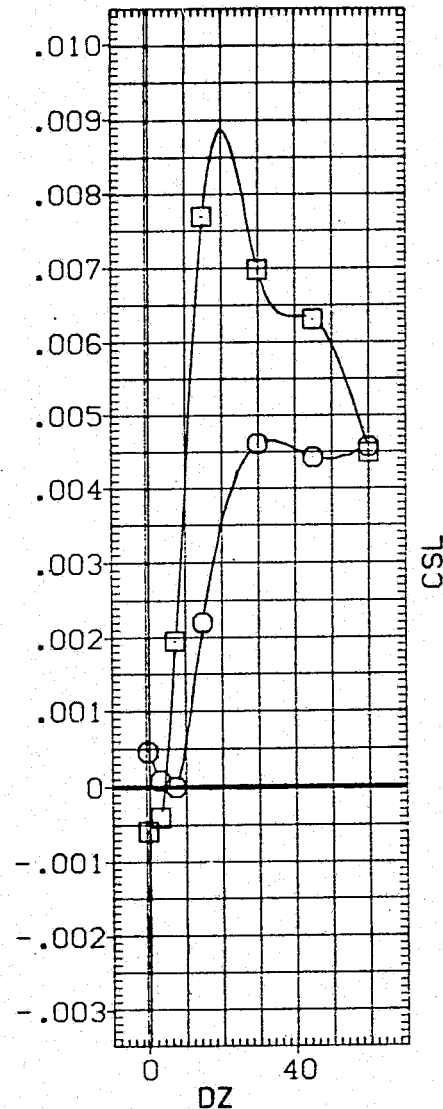
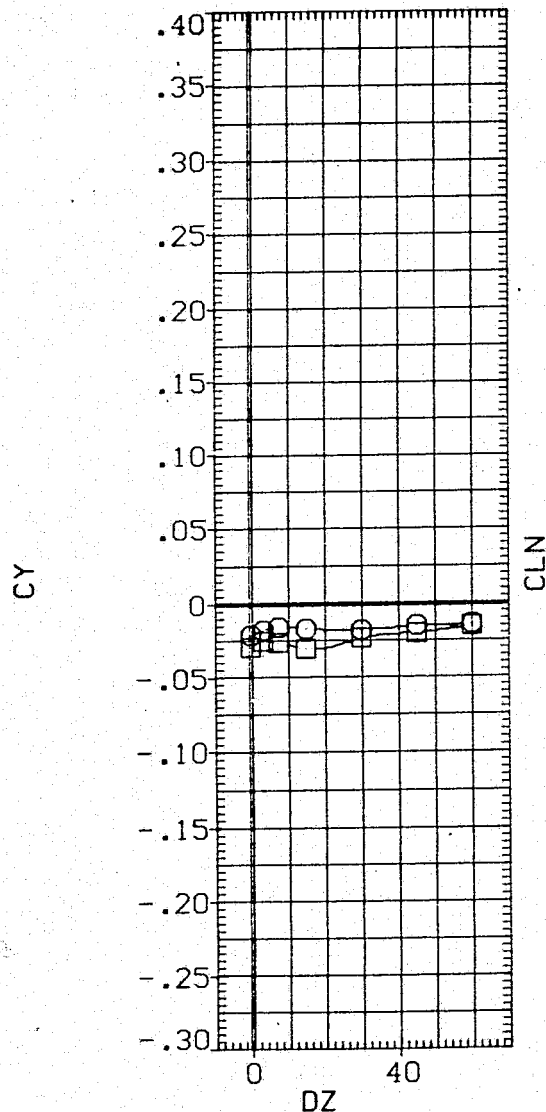


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000
14.000ALPHAC
ELV-18
ELEVON
PHI
DY

PARAMETRIC VALUES

4.000	BETAC	.000
.000	ELV-08	3.000
5.000	MACH	.600
7.500	DX	10.000
10.000	BETA0	.000

REFERENCE INFORMATION

SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.AC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

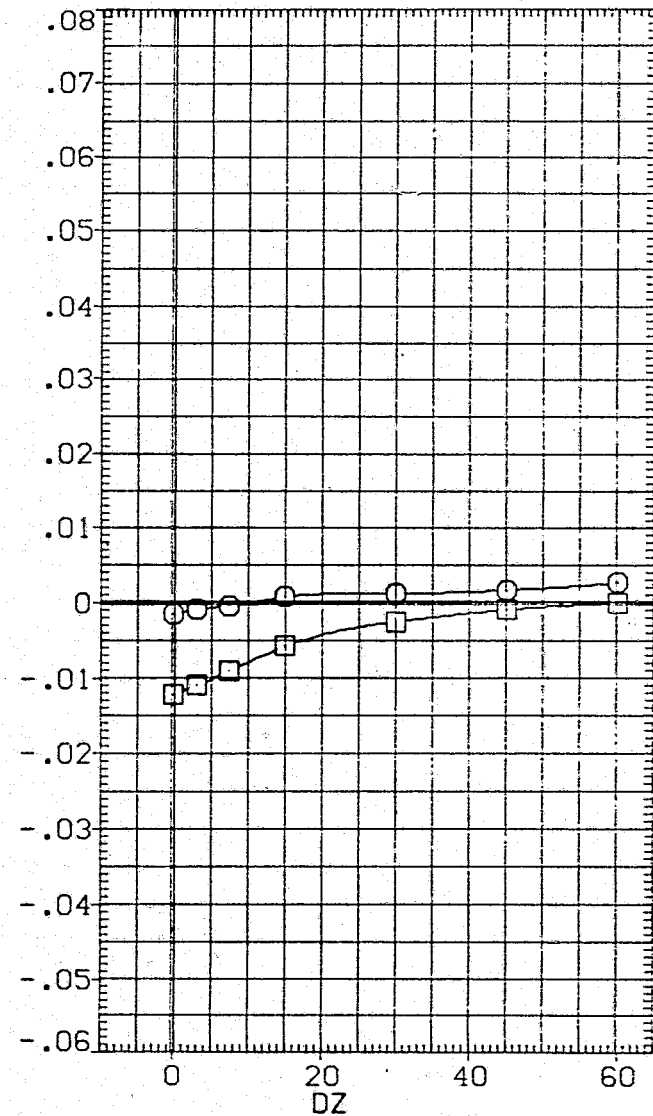
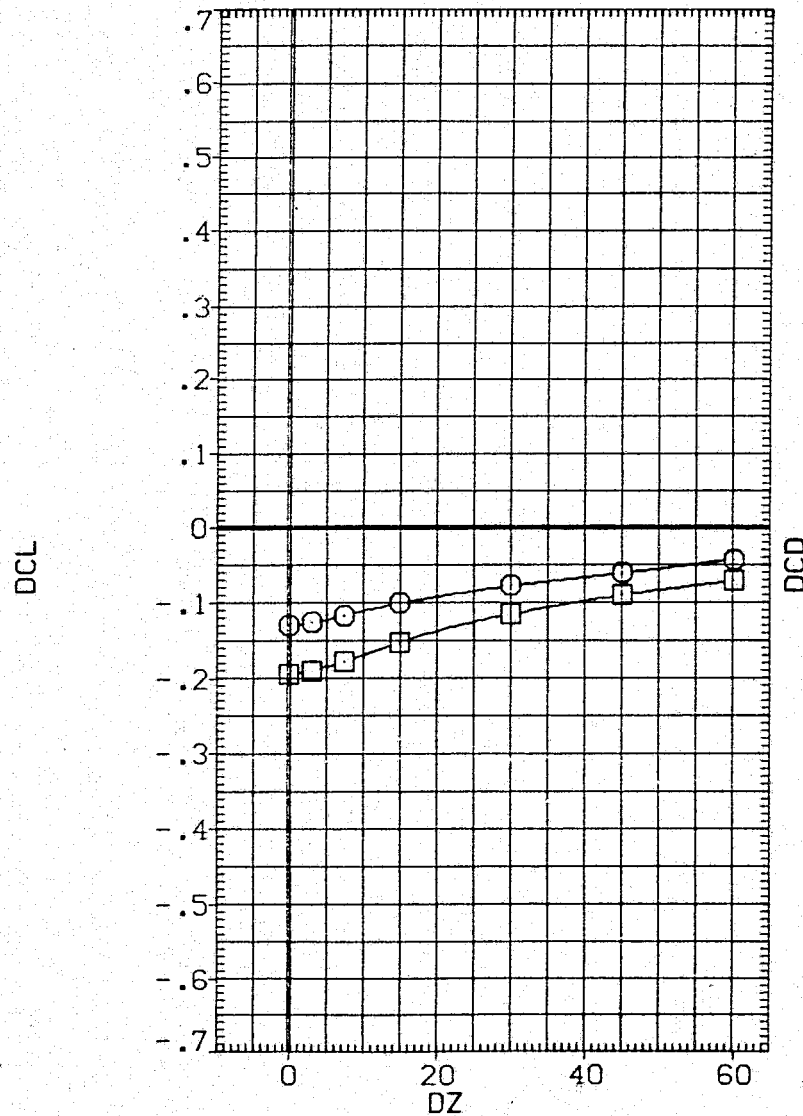


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

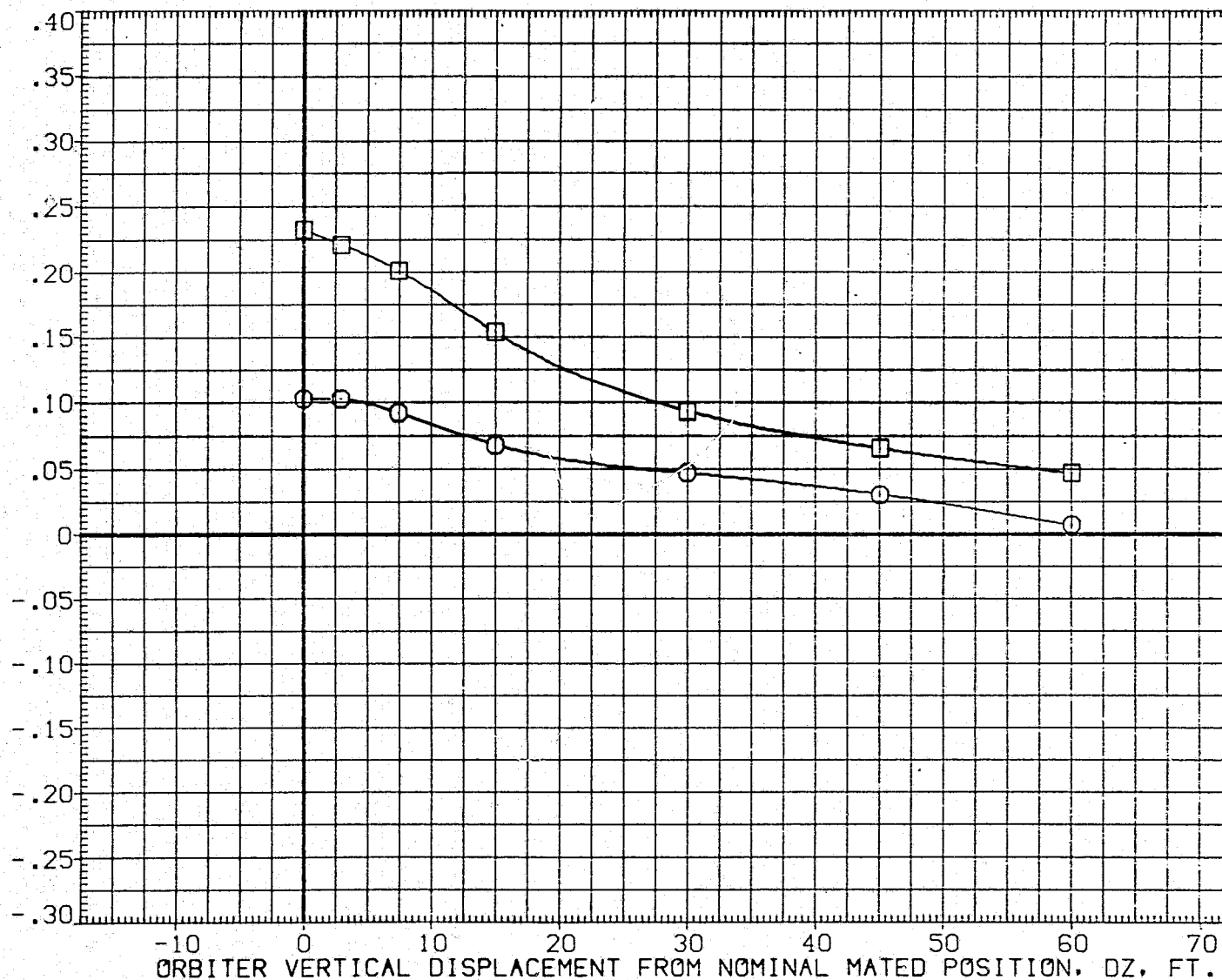


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	4.000	BETAC	.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
SREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

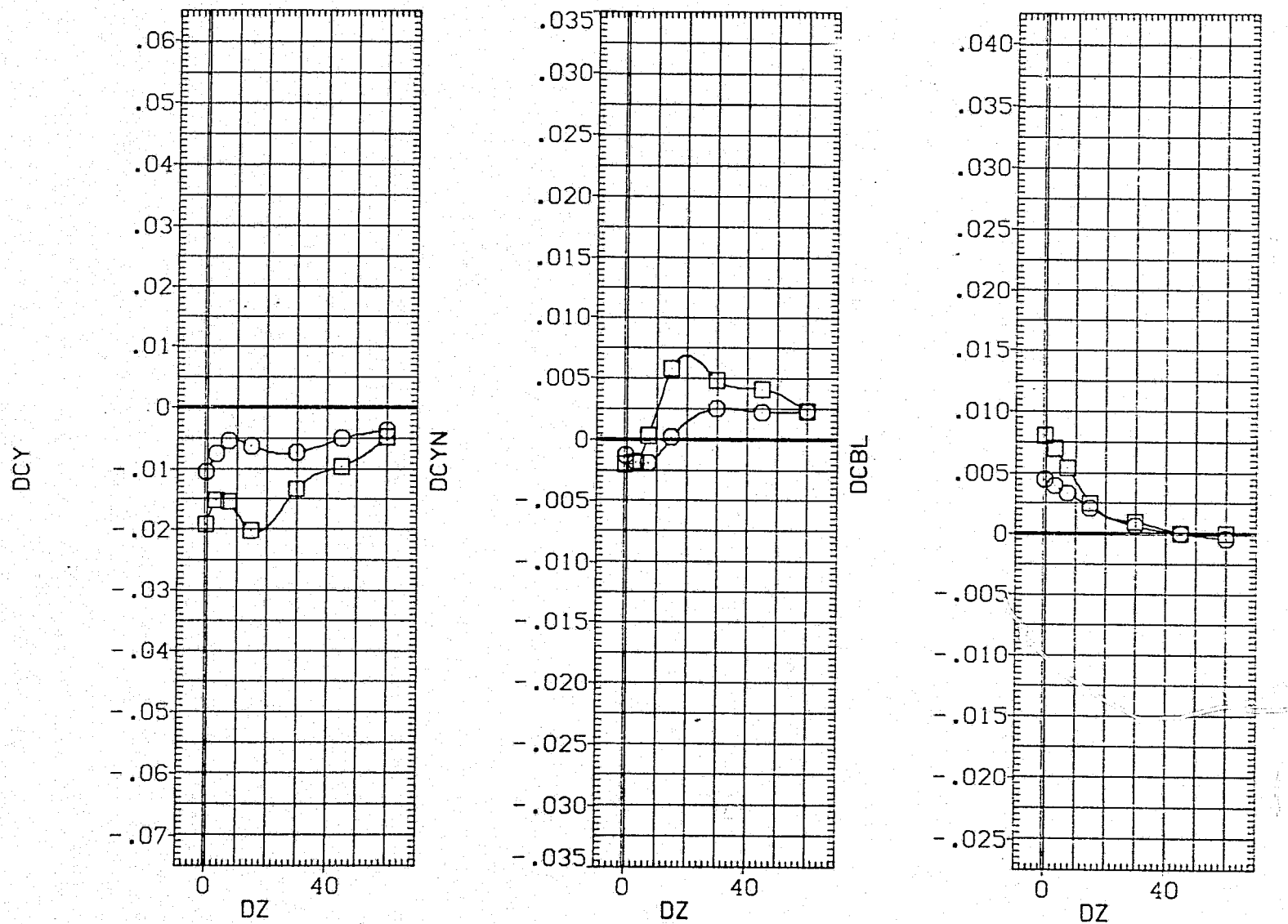


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	4.000	BETAC	.000
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		PHI	7.500	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

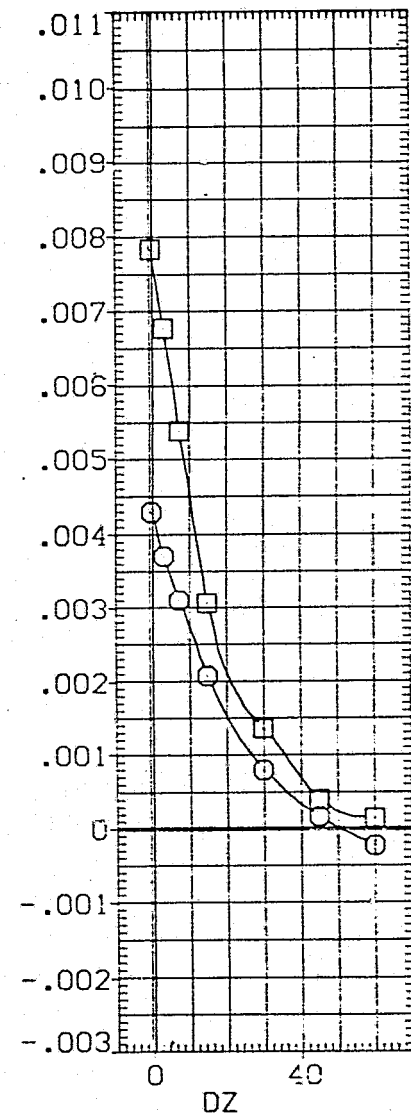
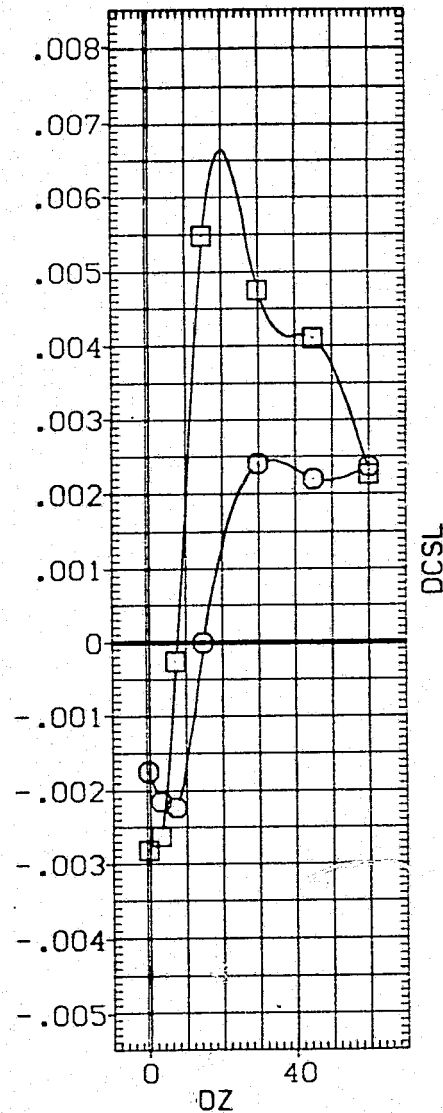
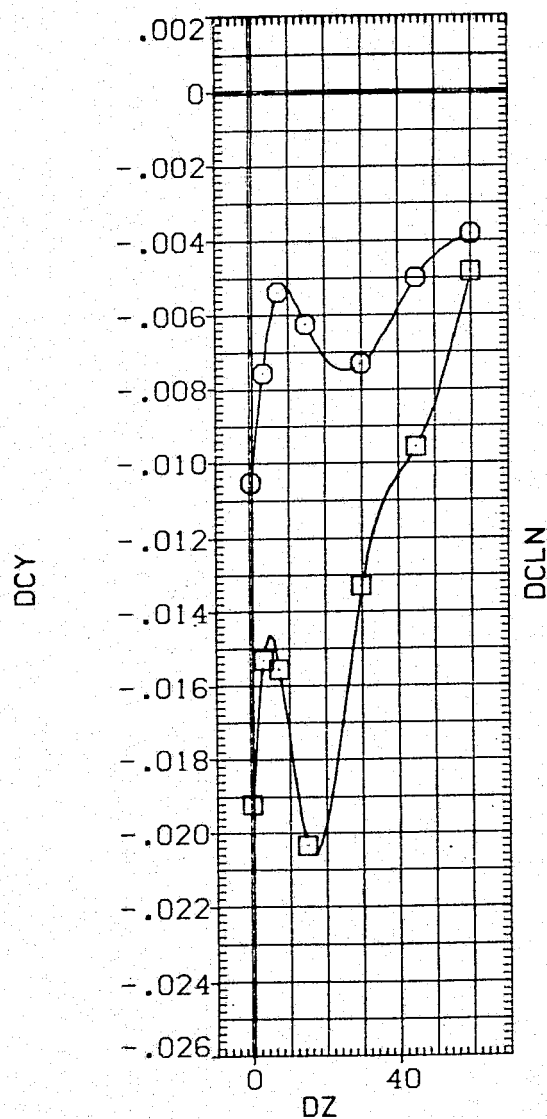


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

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CARRIER DATA(MGNOS1)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	.000
		PHI	7.500	DY	10.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SG.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

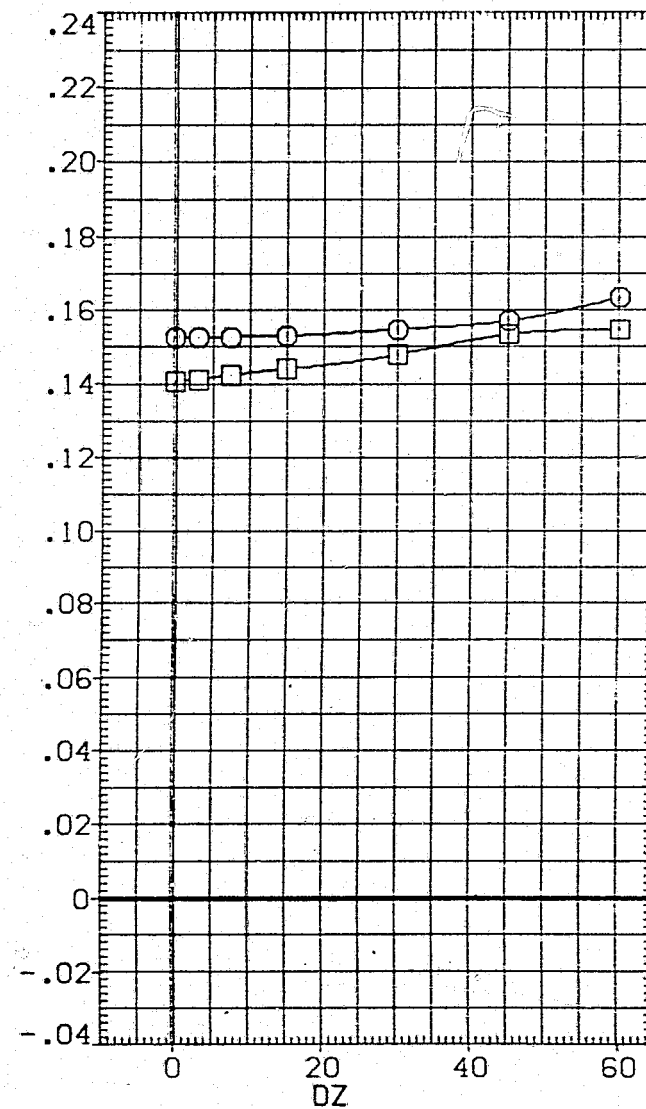
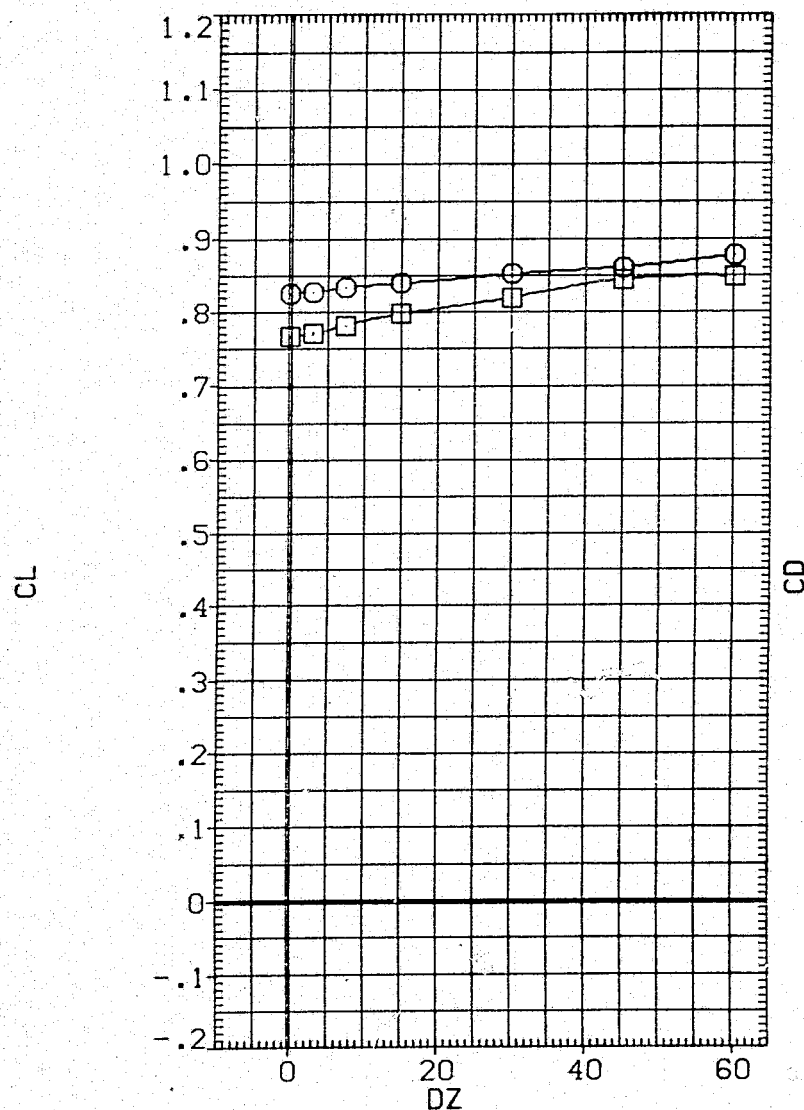


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○

□

ALPHA0

10.000

ELV-1B

14.000

ELEV0N

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

10.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

.000

10.000

8.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

PITCHING MOMENT COEFFICIENT, CLM

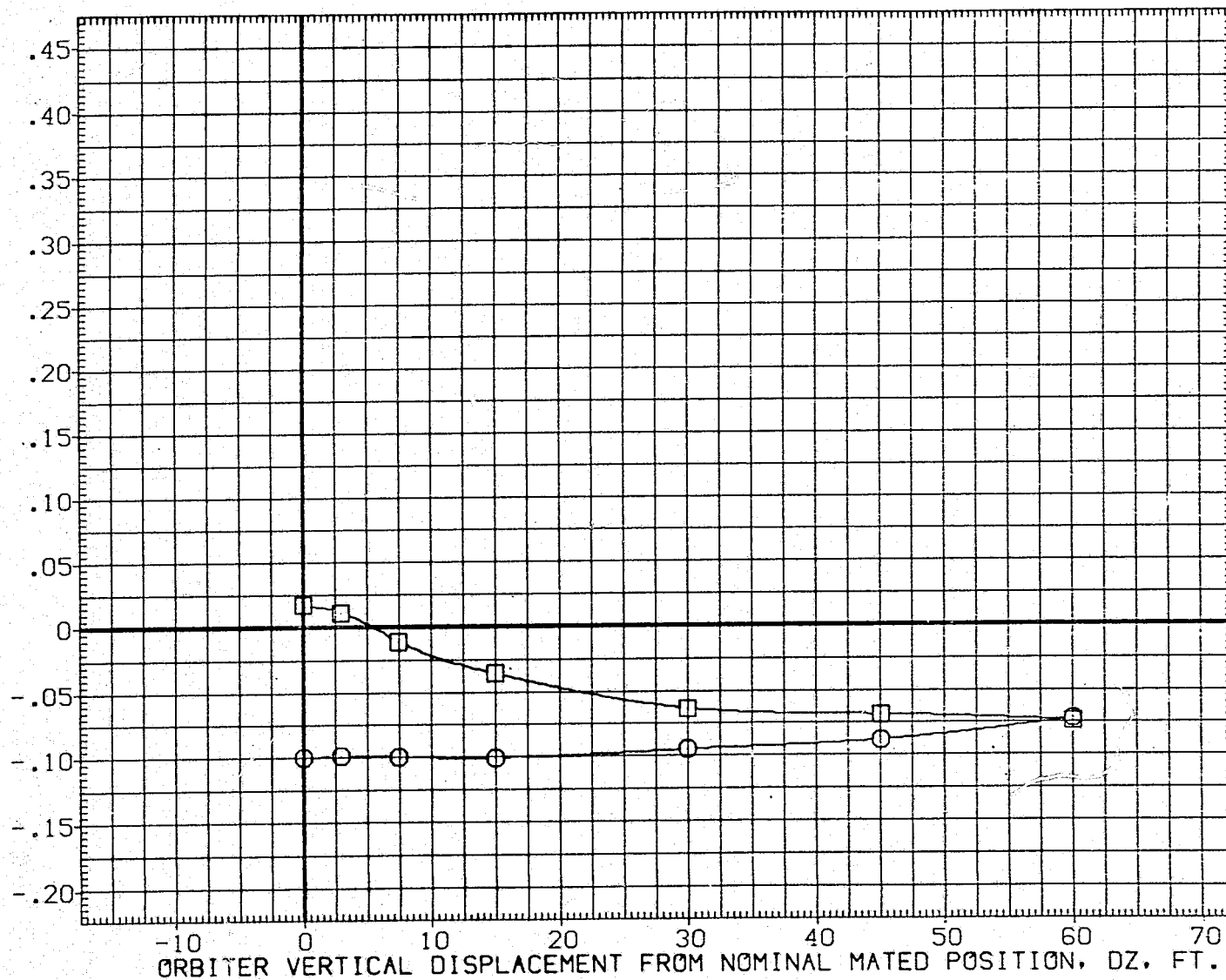


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	VALUES
○	10.000	ELV-1B	.000
□	14.000	ELEVON	5.000
		BETA0	.000
		PHI	7.500
		DX	10.000
		ELV-0B	3.000
		MACH	.600
		BETAC	.000
		DY	10.000
		ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
YMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

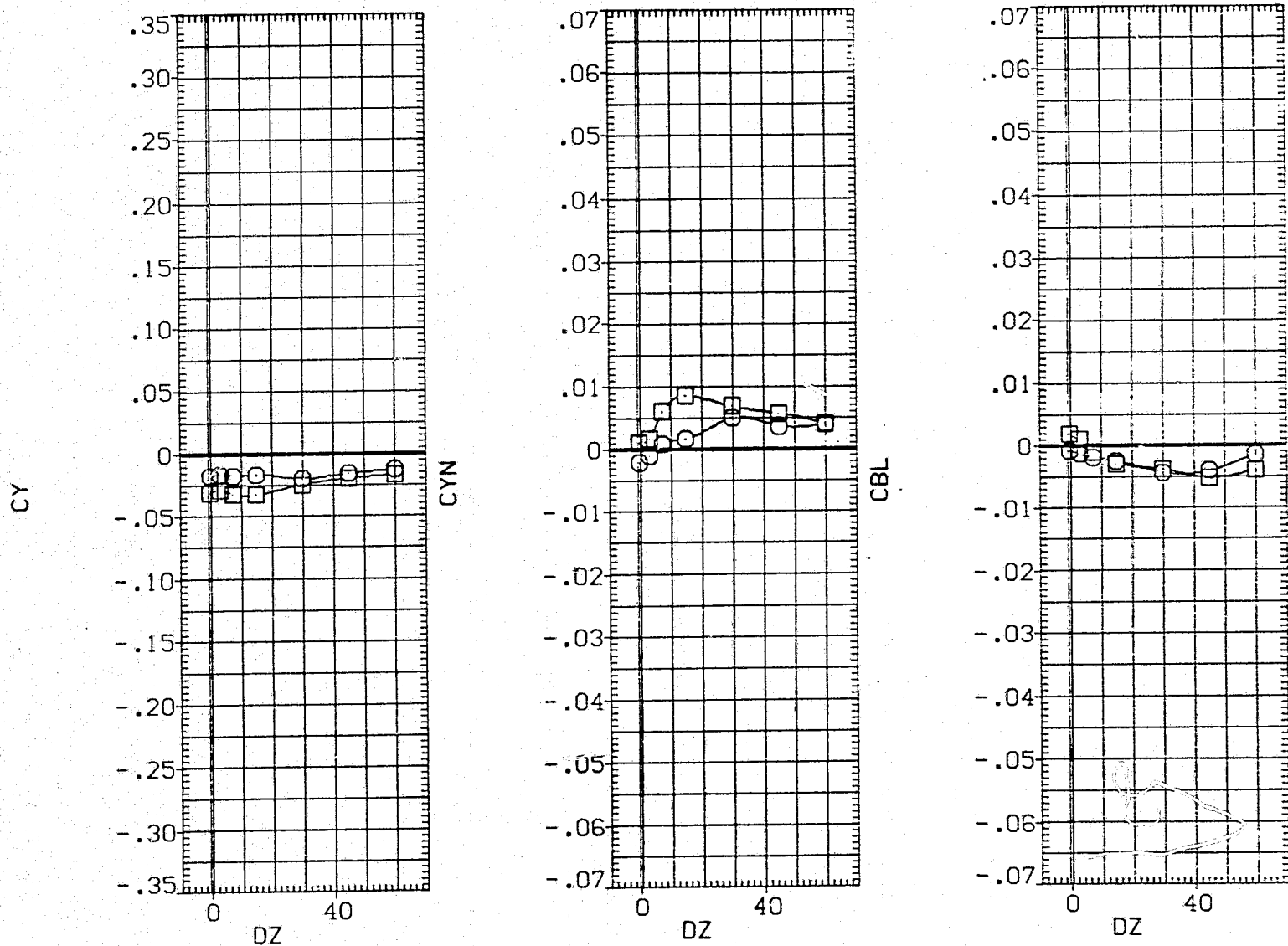


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ELV-1B .000	ELV-0B 3.000
□	14.000	ELEVON 5.000	MACH .600
		BETA0 .000	BETAC .000
		PHI 7.500	DY 10.000
		DX 10.000	ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

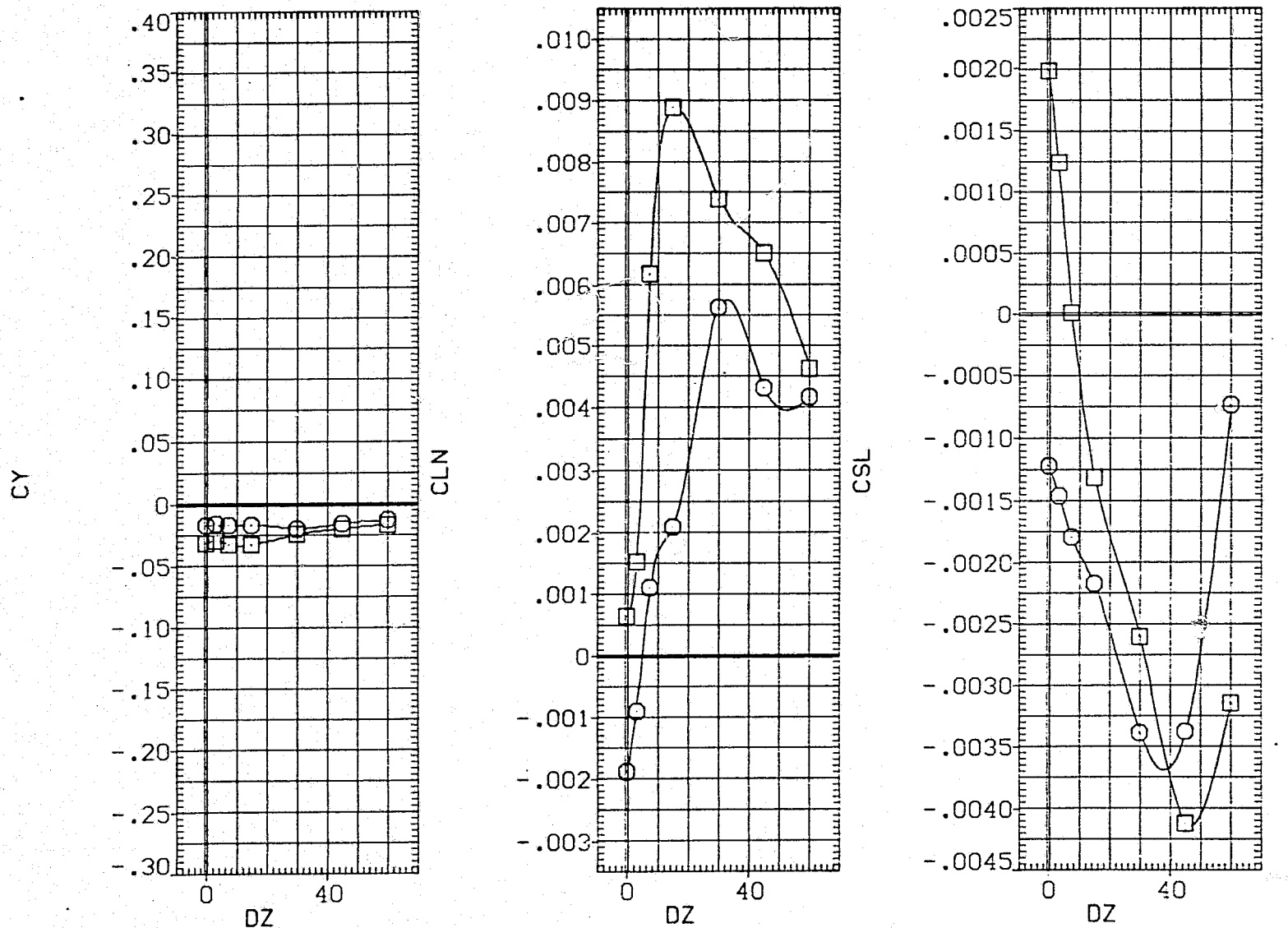


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ALPHAC 8.000 BETAC .000
□	14.000	ELV-1B .000 ELV-0B 3.000
		ELEVON 5.000 MACH .600
		PHI 7.500 DX 10.000
		DY 10.000 BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2349.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

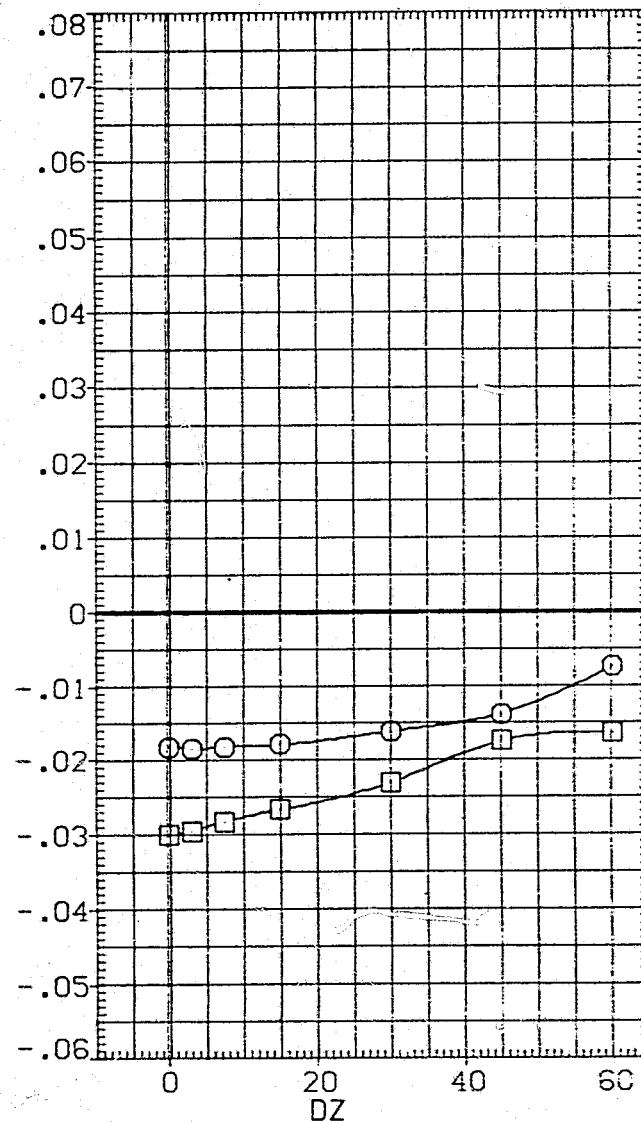
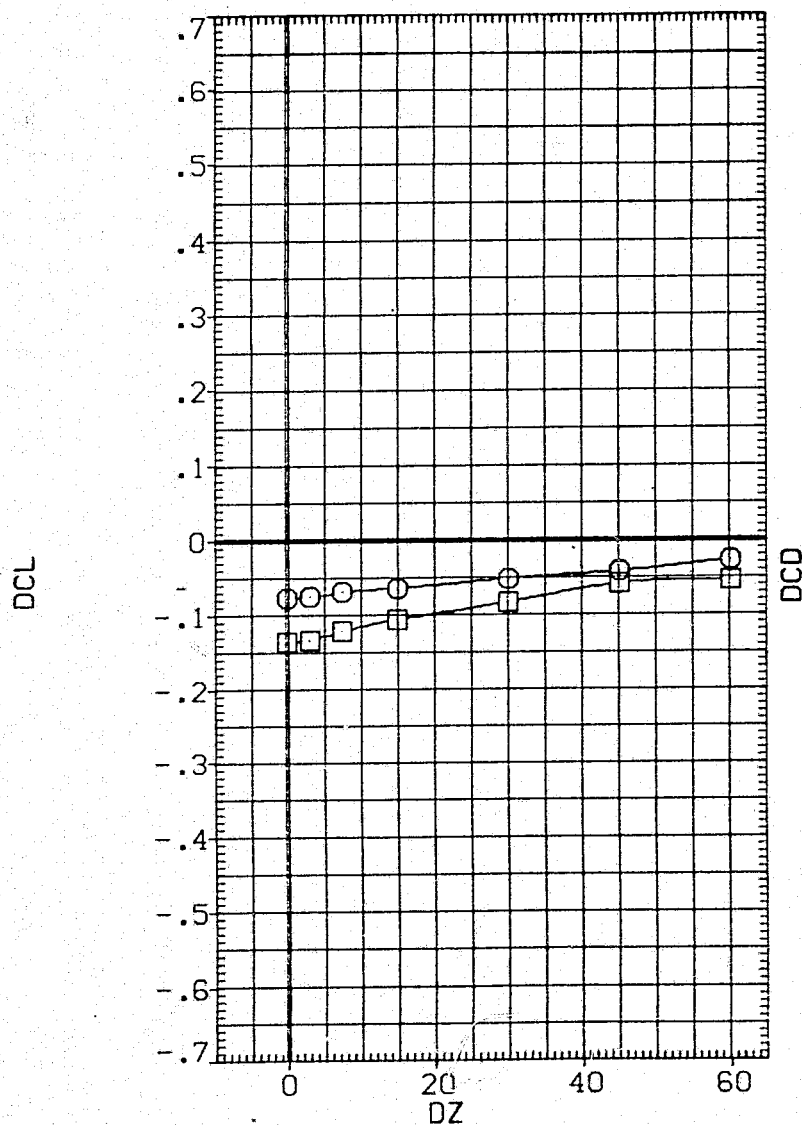


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 (747/1 01 S1) - (747/1)

D/S (091 - 035) (UGN091)

SYMBOL

□ ○

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

BETAC

.000

ELV-OB

3.000

MACH

.600

DX

10.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000

SQ.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

IN.YC

ZMRP 190.8000

IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

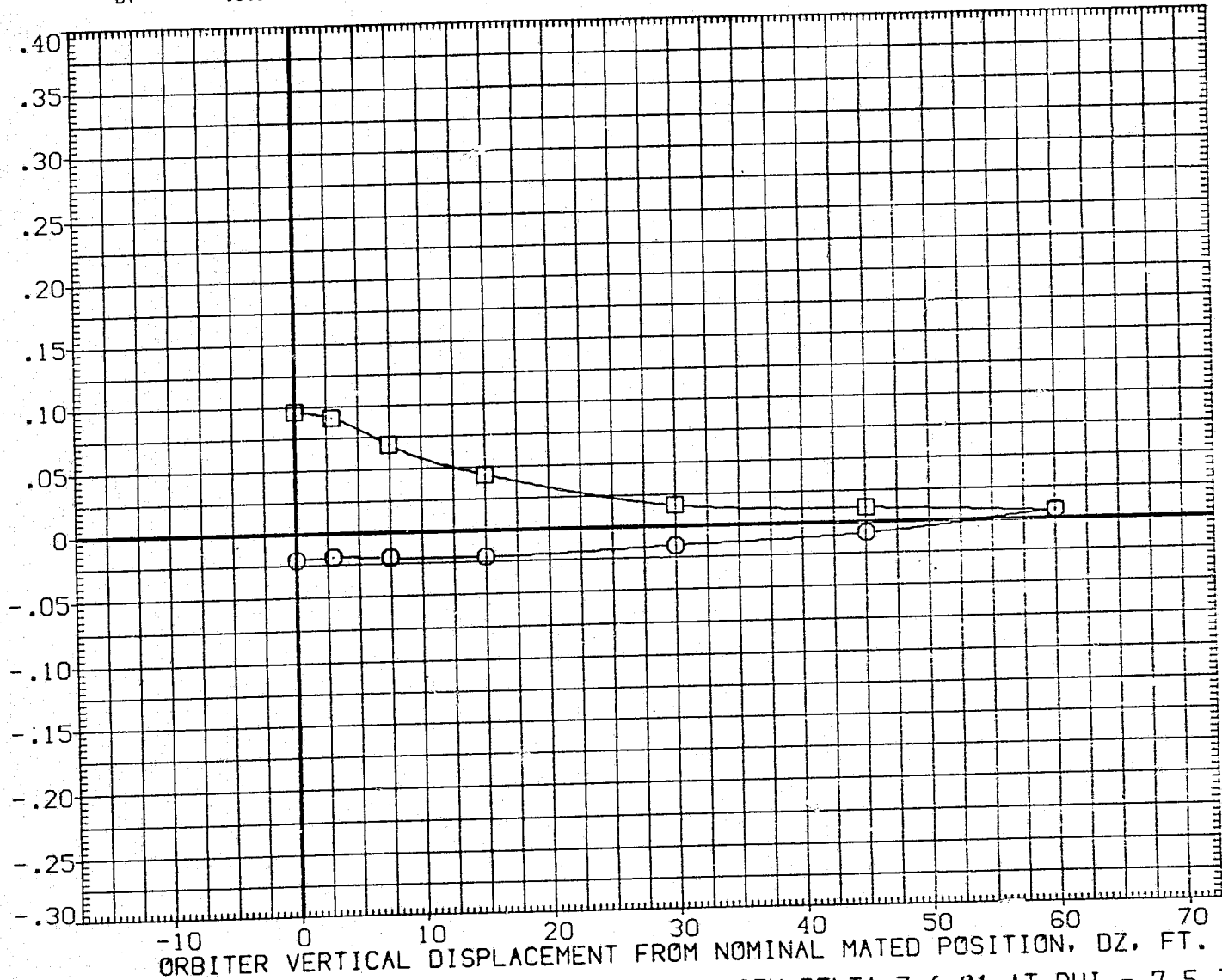


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	.000
□	14.000	ELV-1B	.000	ELV-0B	3.000
		ELEVON	5.000	NACH	.600
		PHI	7.500	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

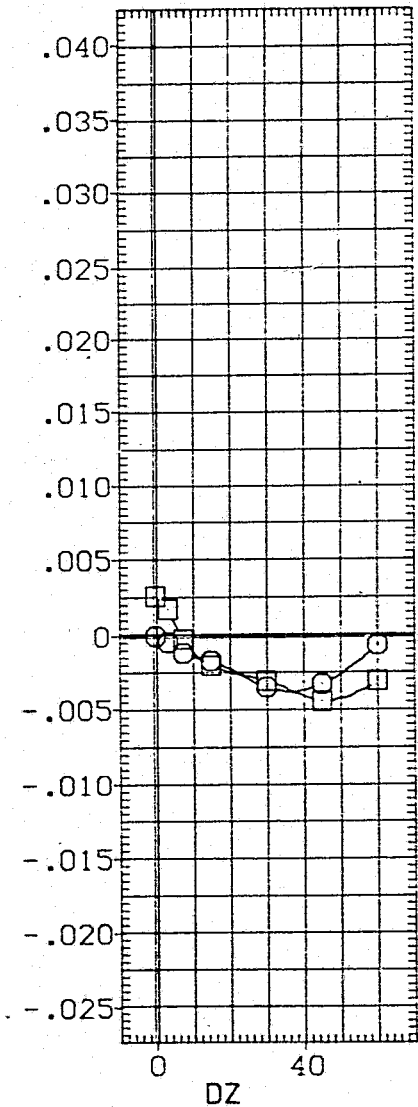
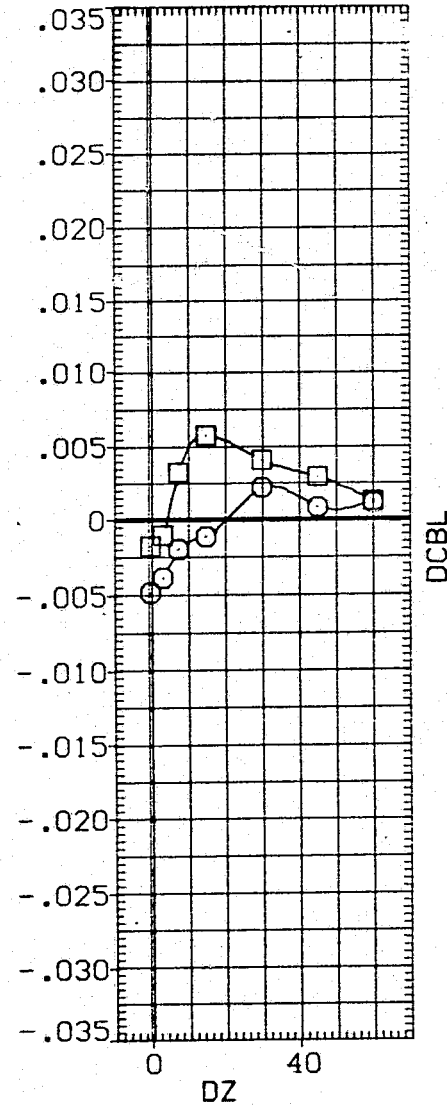
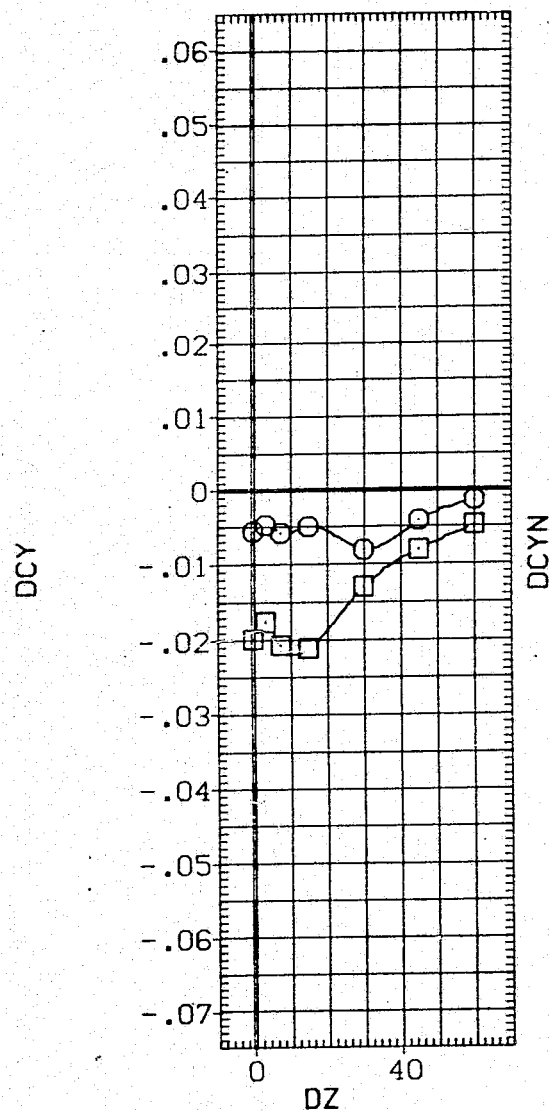


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES			
	10.000	ALPHAC	8.000	BETAC	.000	
○	14.000	ELV-IB	.000	ELV-OB	3.000	
□		ELEVON	5.000	MACH	.600	
		PHI	7.500	DX	10.000	
		DY	10.000	BETA0	.000	

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

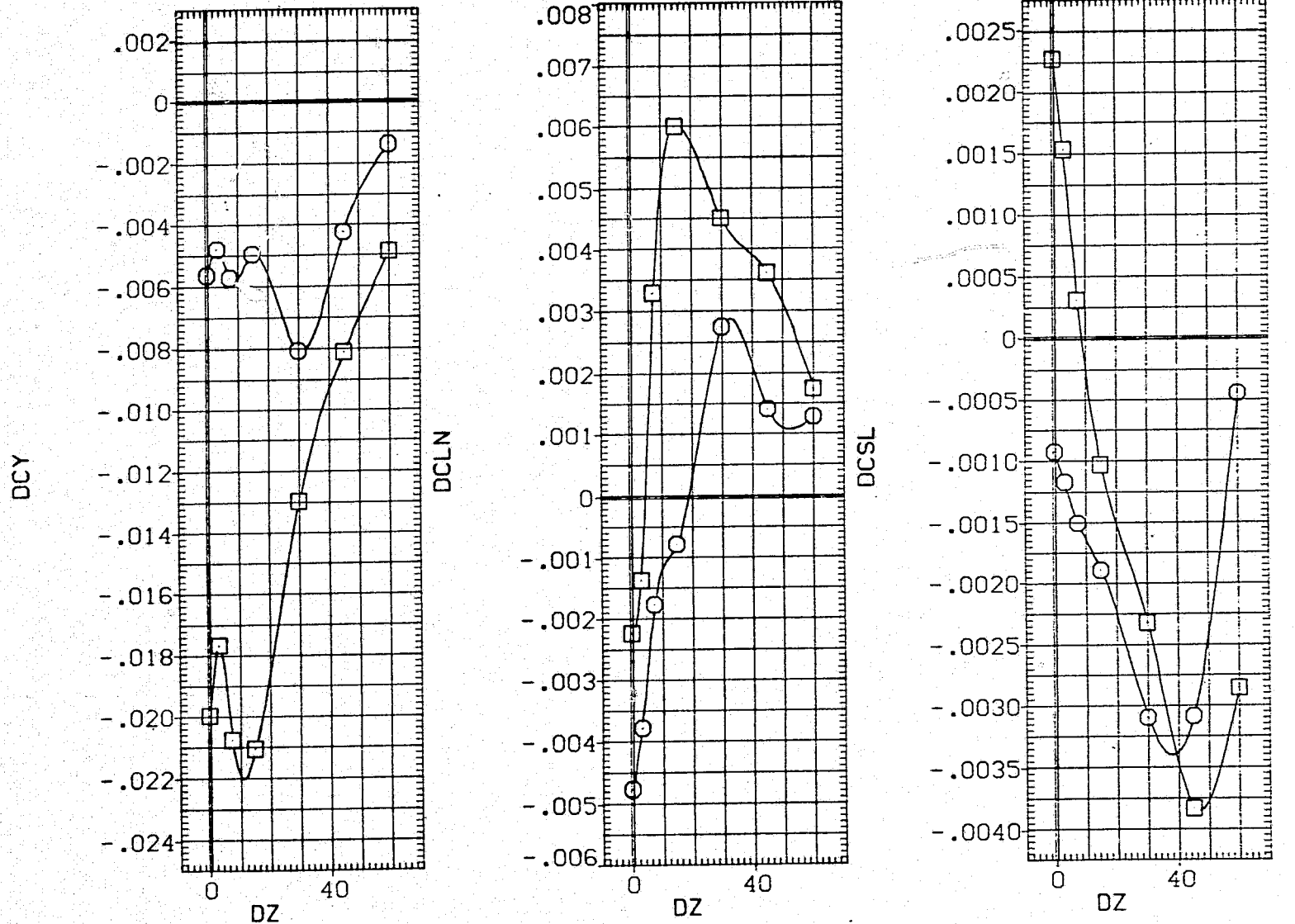


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEVON	5.000	MACH	.600
		BETA0	.000	BETAC	5.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

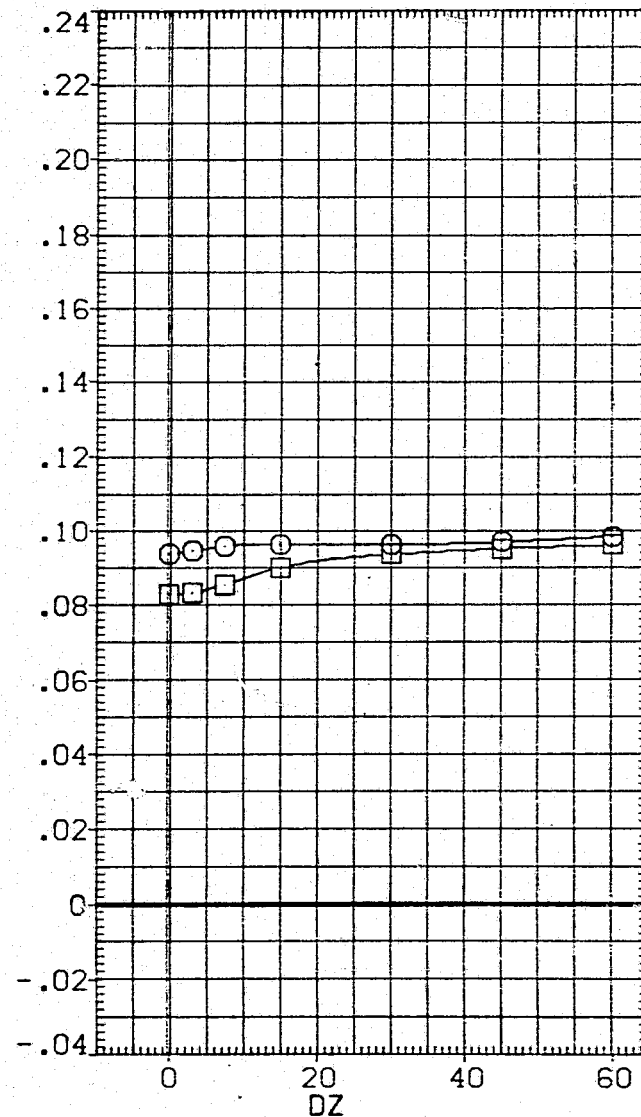
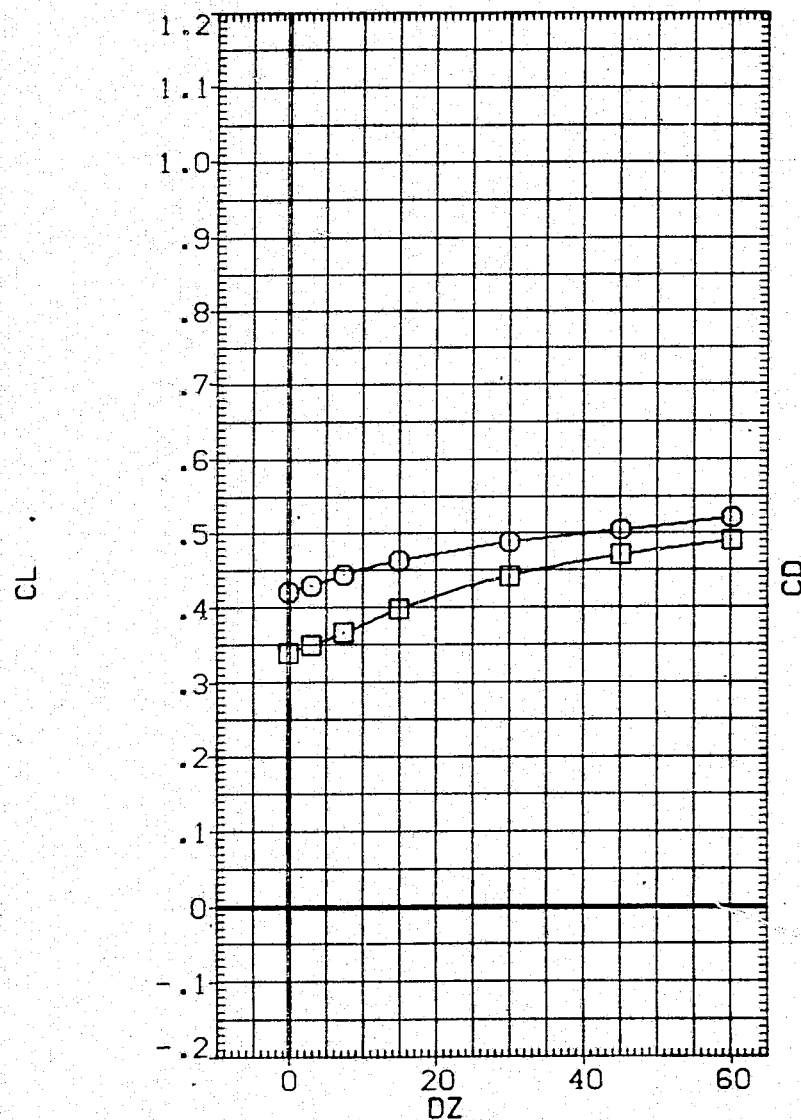


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES			
	10.000	ELV-1B	.000	ELV-0B	3.000	
○	14.000	ELEVON	5.000	MACH	.600	
□		BETA0	.000	BETAC	5.000	
		PHI	7.500	OY	10.000	
		DX	.000	ALPHAC	4.000	

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

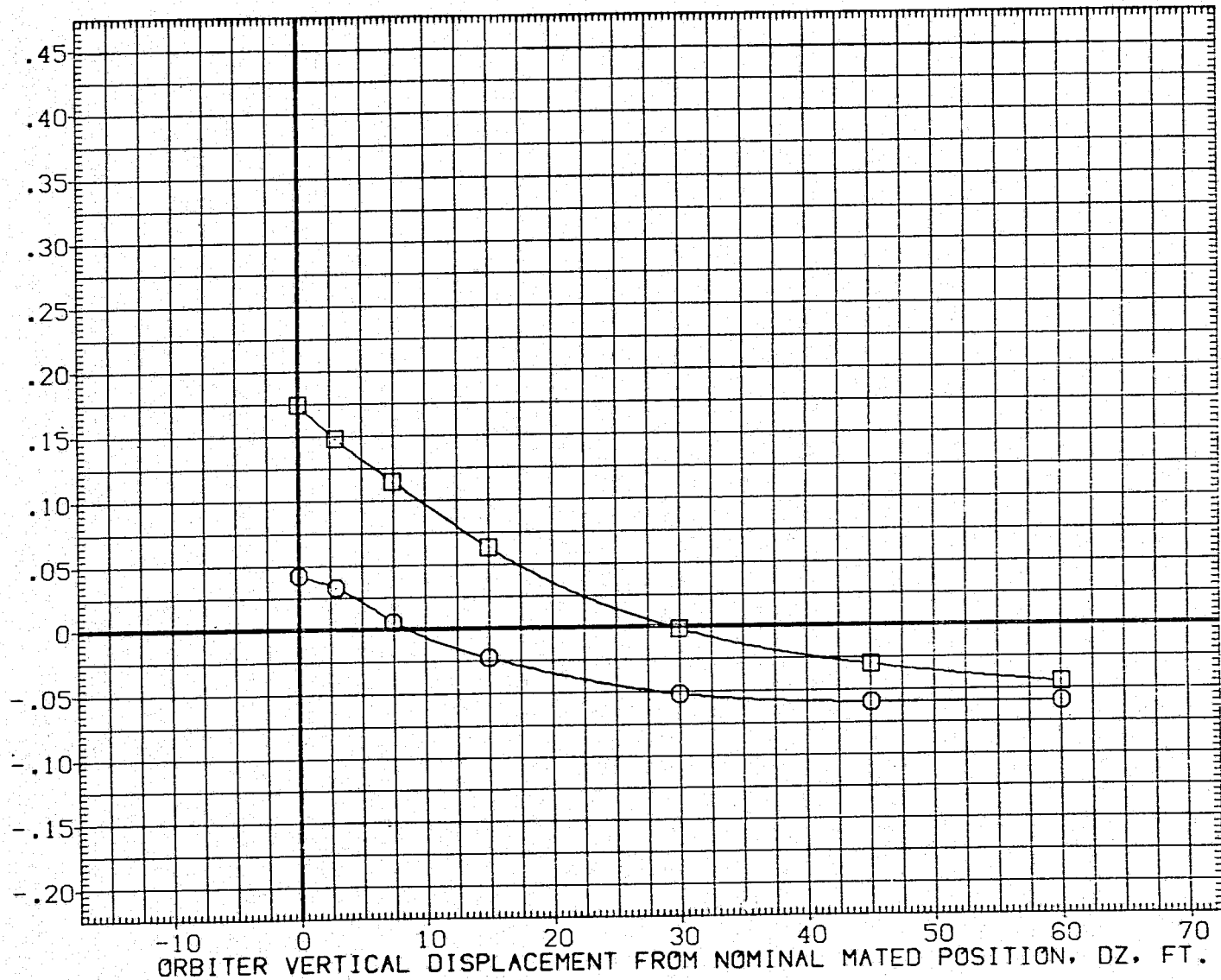


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	DY	5.000
		DX	7.500	ALPHAC	10.000
			.000		4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1379.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

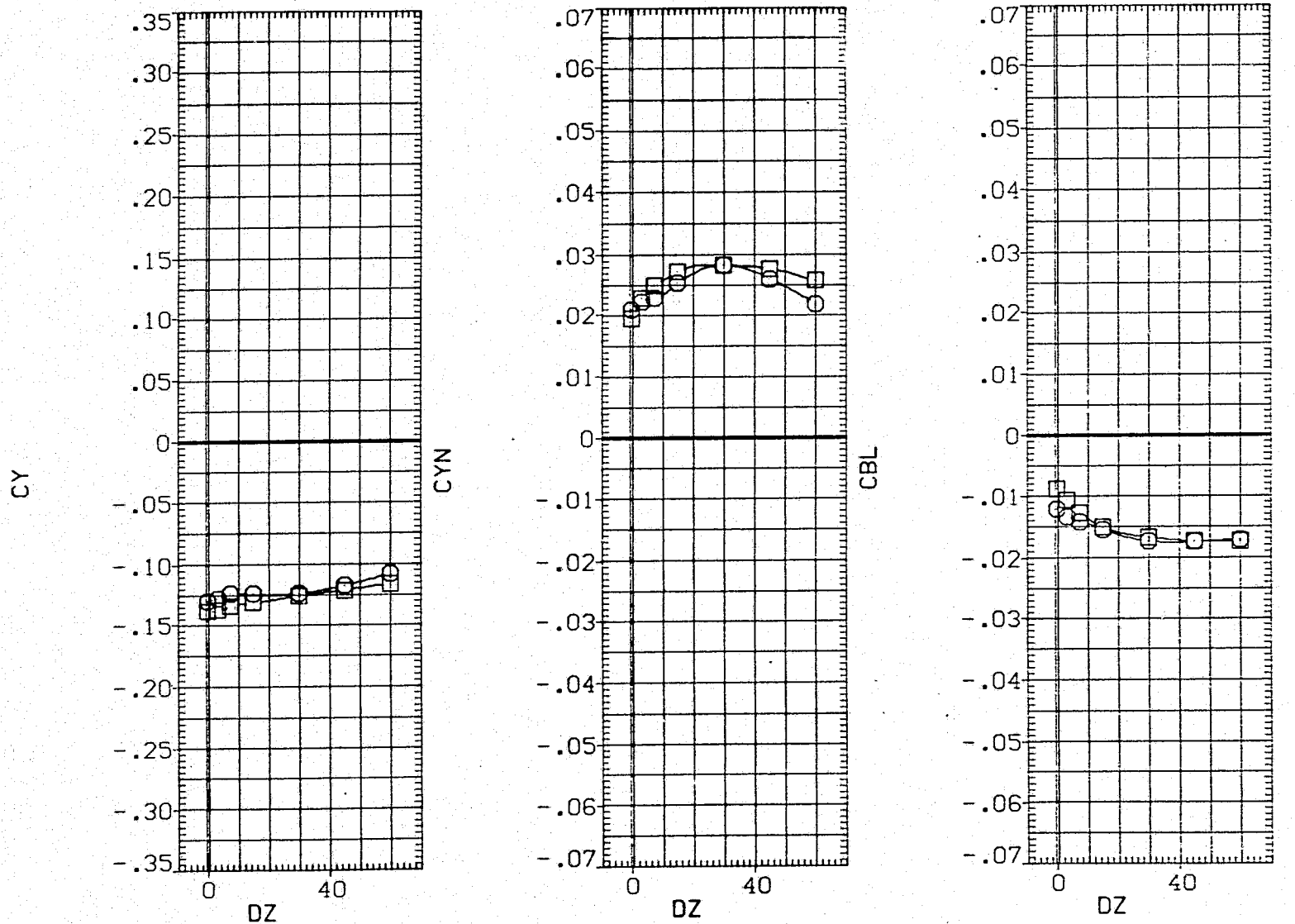


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-18 .000 ELV-08 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC 5.000
		PHI 7.500 DY 10.000
		DX .000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

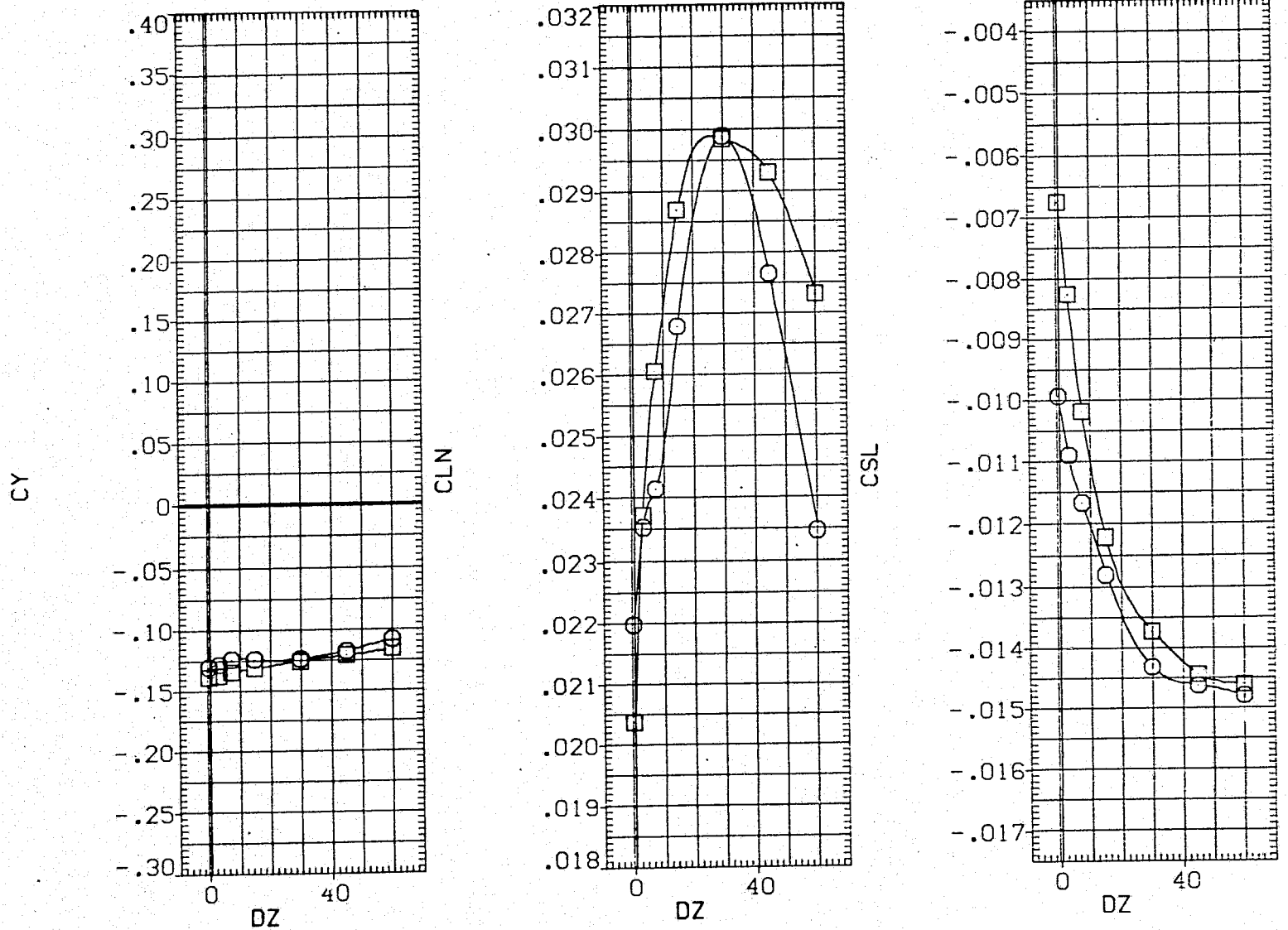


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

4.000

.000

5.000

7.500

10.000

BETAC

ELV-0B

MACH

DX

BETA0

5.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

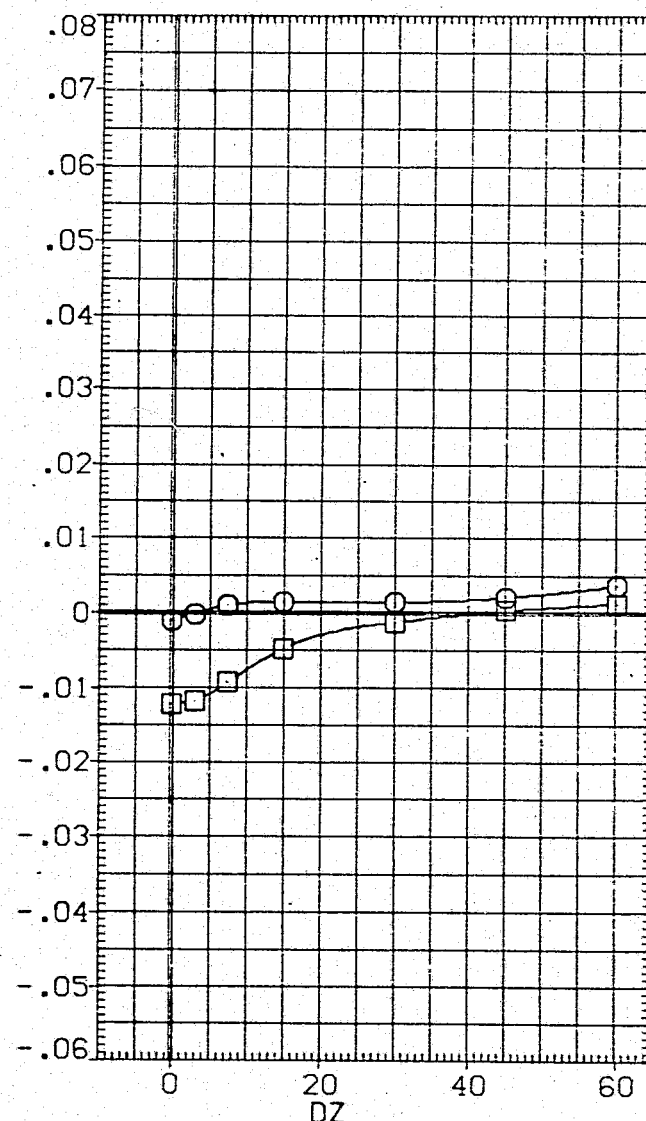
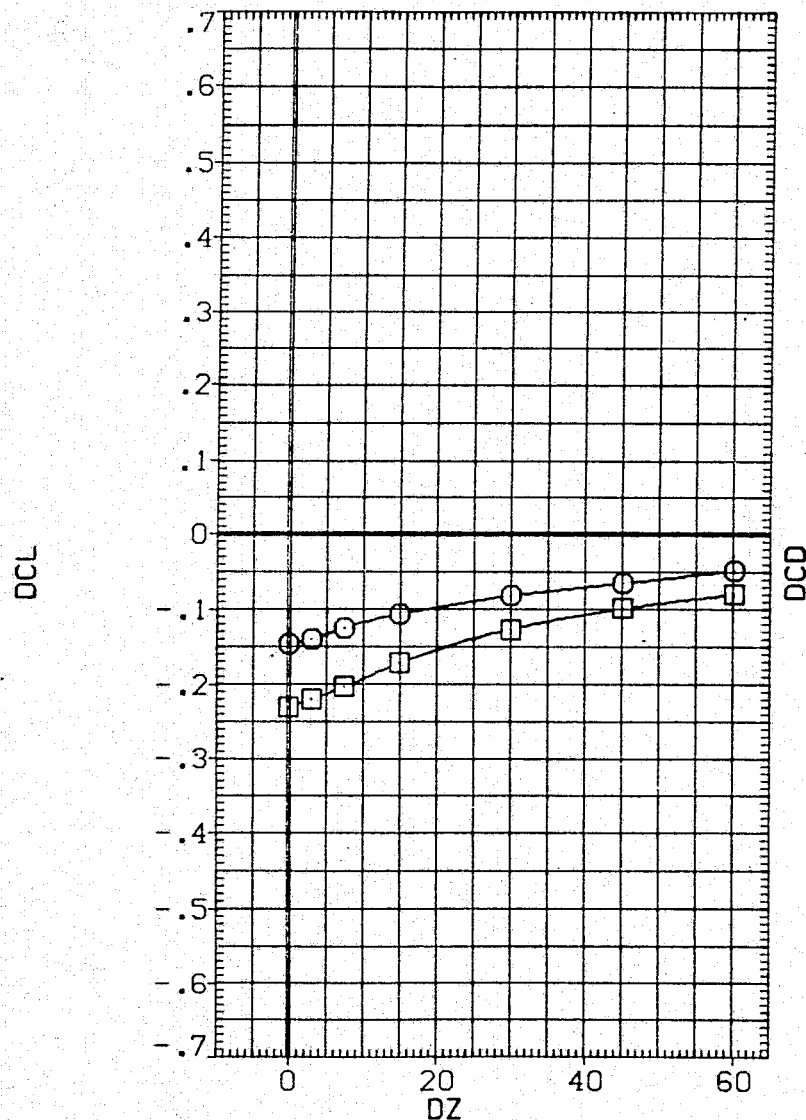


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

5.000

ELV-IB

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

PHI

7.500

DX

.000

DY

10.000

BETA0

.000

REFERENCE INFORMATION

SREF 5500.0000

SQ.FT.

LREF 327.7800

IN.

BREF 2348.0400

IN.

XMRP 1339.9000

IN.XC

YMRP .0000

IN.YC

ZMRP 190.8000

IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

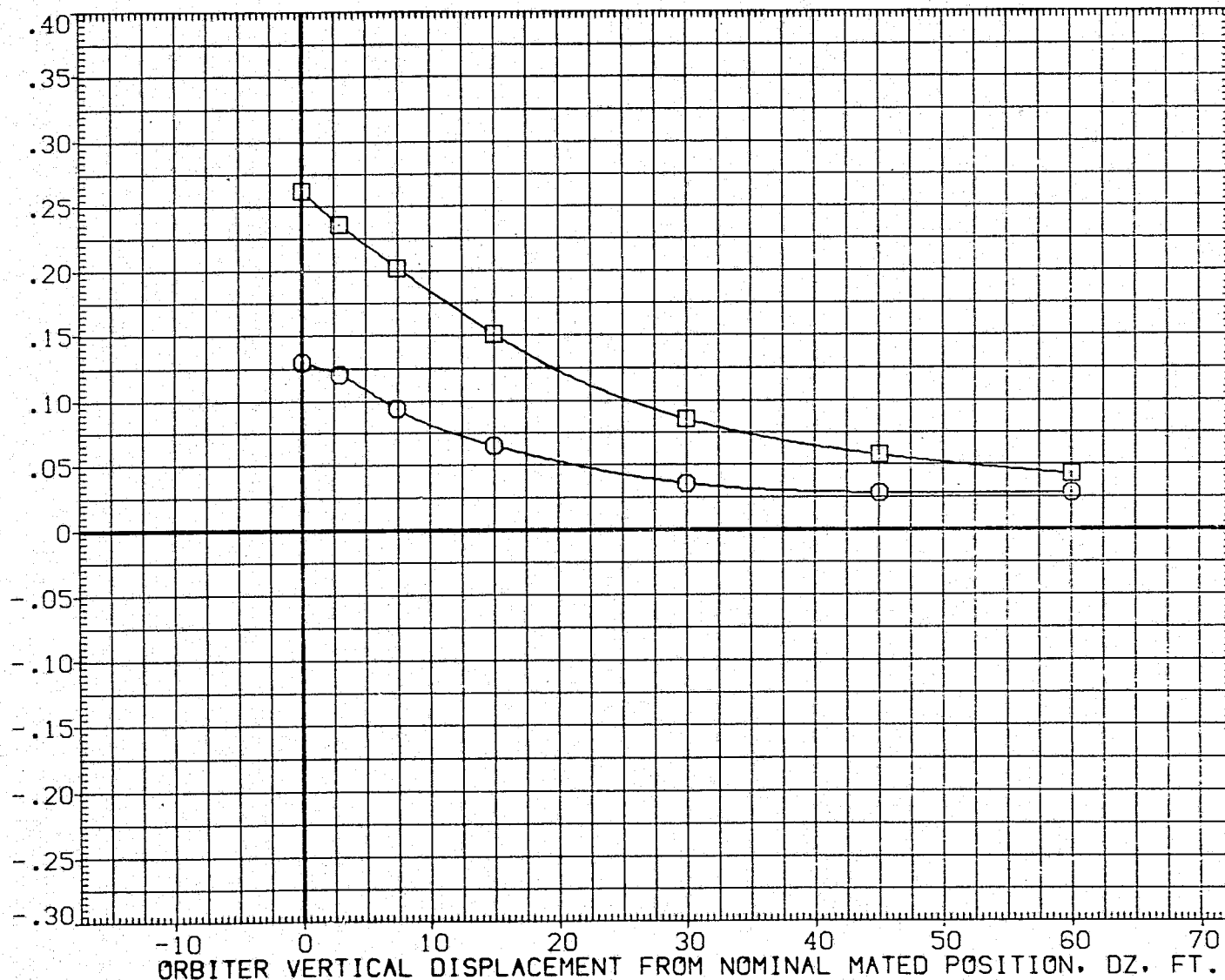


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES			
	10.000	ALPHAC	4.000	BETAC	5.000	
○	14.000	ELV-IB	.000	ELV-OB	3.000	
□		ELEVON	5.000	MACH	.600	
		PHI	7.500	DX	.000	
		DY	10.000	BETA0	.000	

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

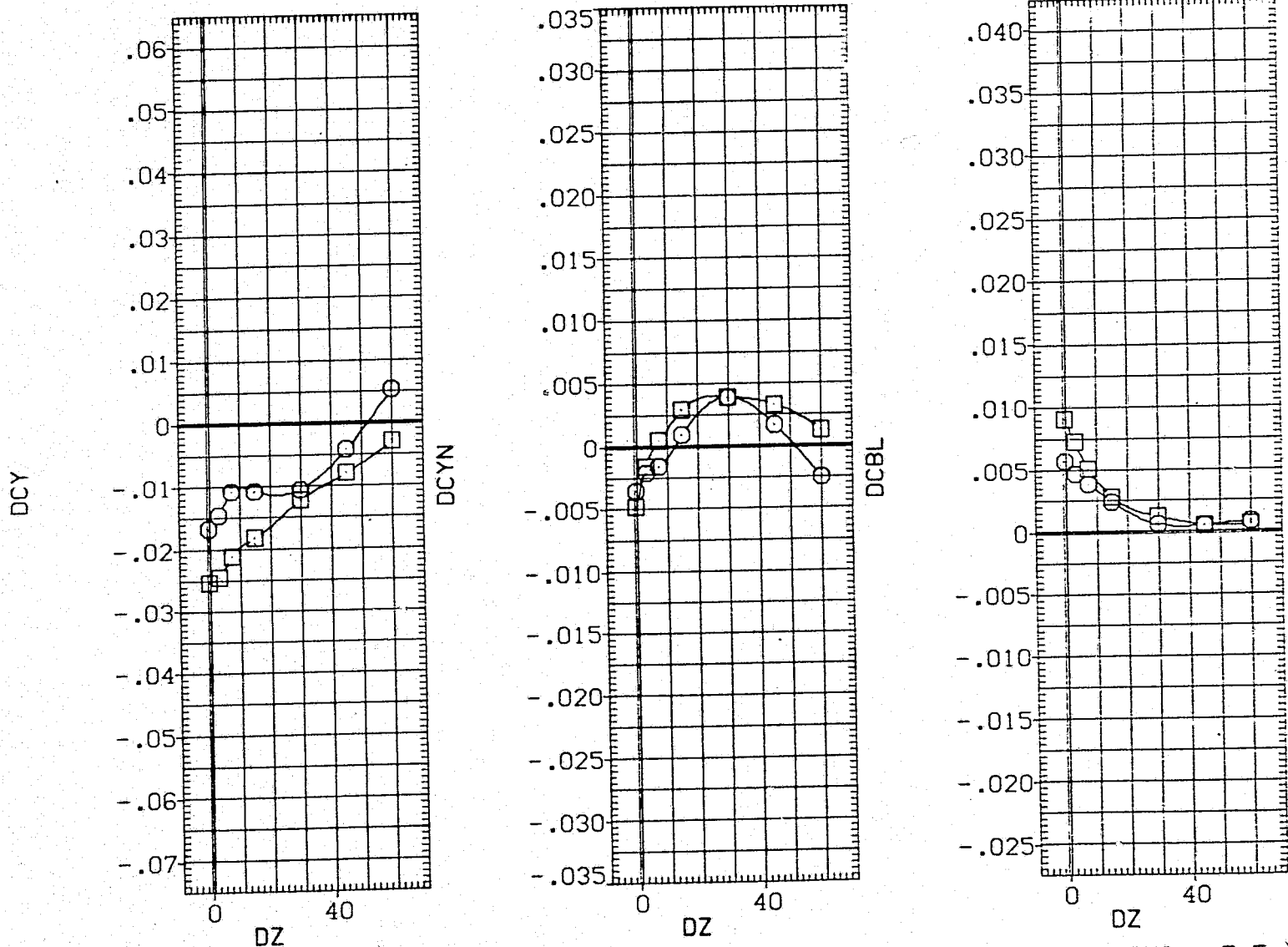


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC 4.000	BETAC 5.000
□	14.000	ELV-IB .000	ELV-OB 3.000
		ELEVON 5.000	MACH .600
		PHI 7.500	DX .000
		DY 10.000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9500	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

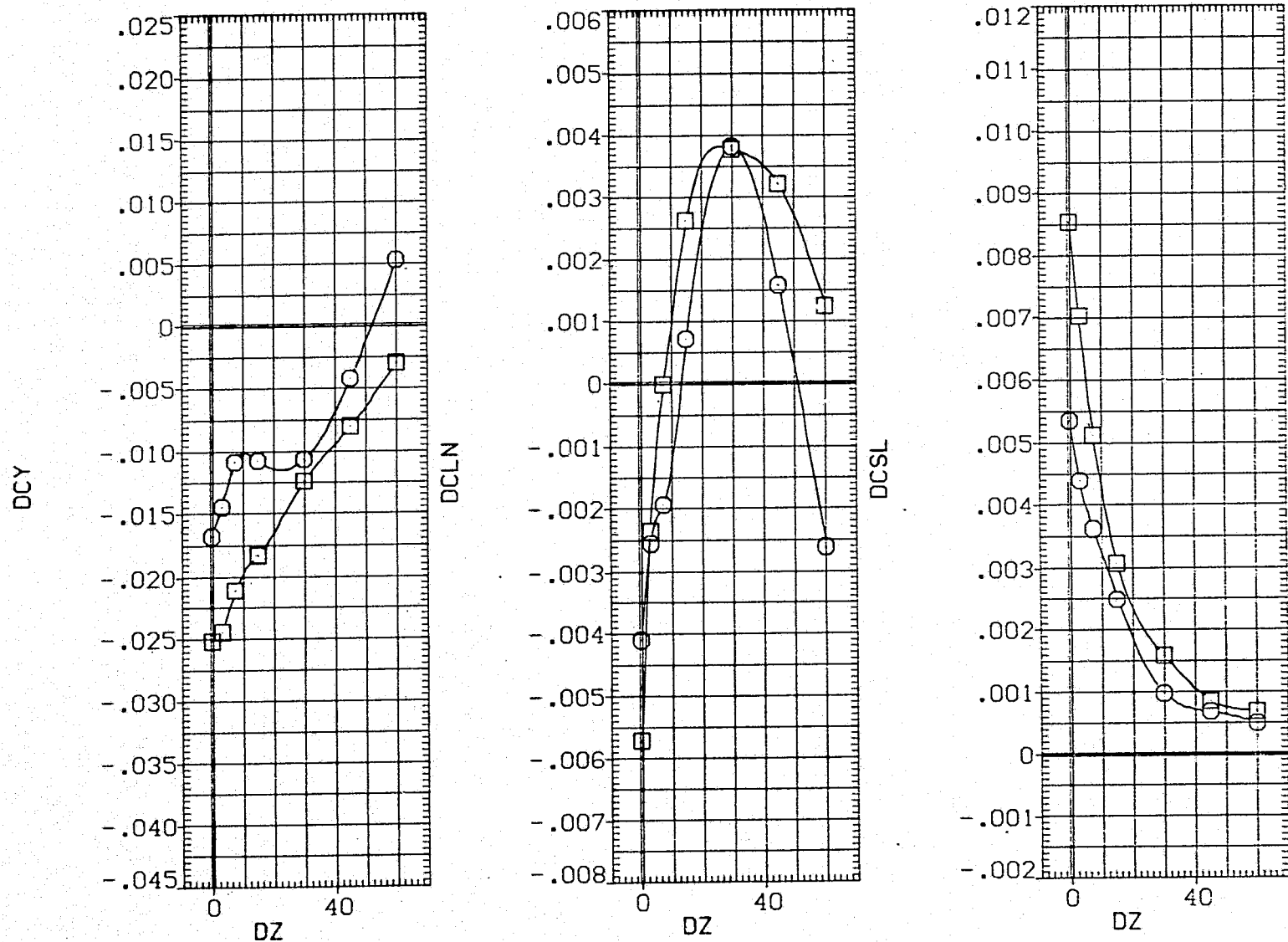


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ELV-1B	.000	ELV-0B	3.000
□	14.000	ELEV0N	5.000	MACH	.600
		BETA0	.000	BETAC	5.000
		PHI	7.500	DY	10.000
		DX	.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

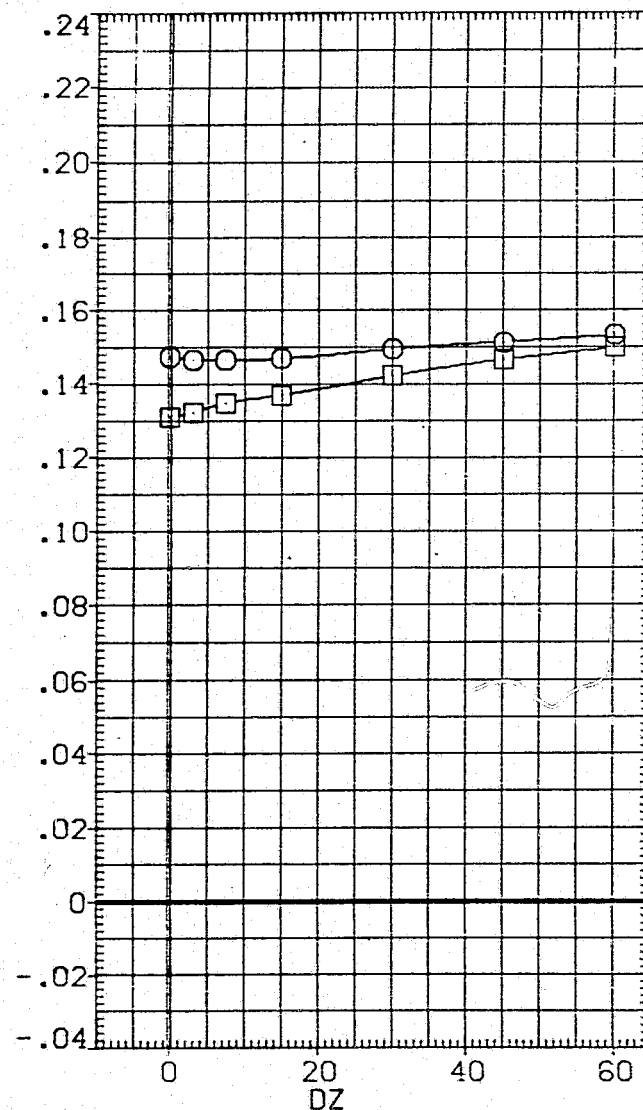
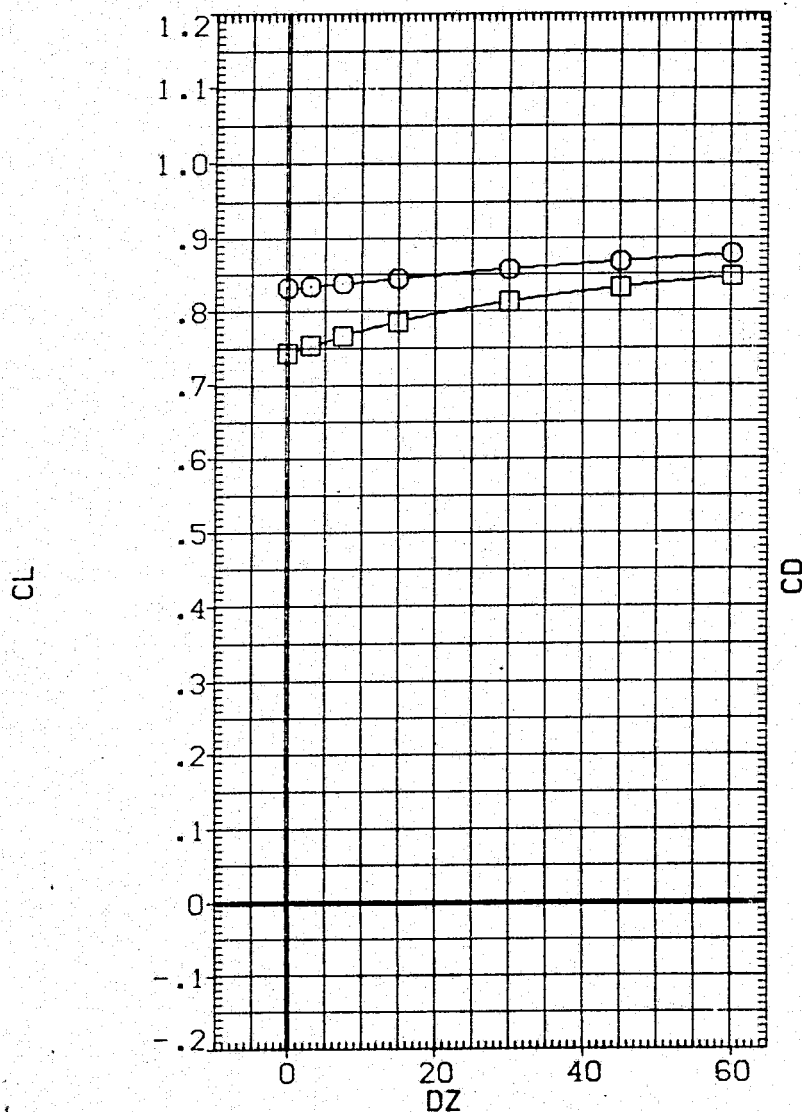


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-IB

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

.000

ELV-OB

MACH

BETAC

DY

ALPHAC

3.000

.600

5.000

10.000

8.000

REFERENCE INFORMATION

SREF

5500.0000

50.FT.

LREF

327.7800

IN.

BREF

2346.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

PITCHING MOMENT COEFFICIENT, CLM

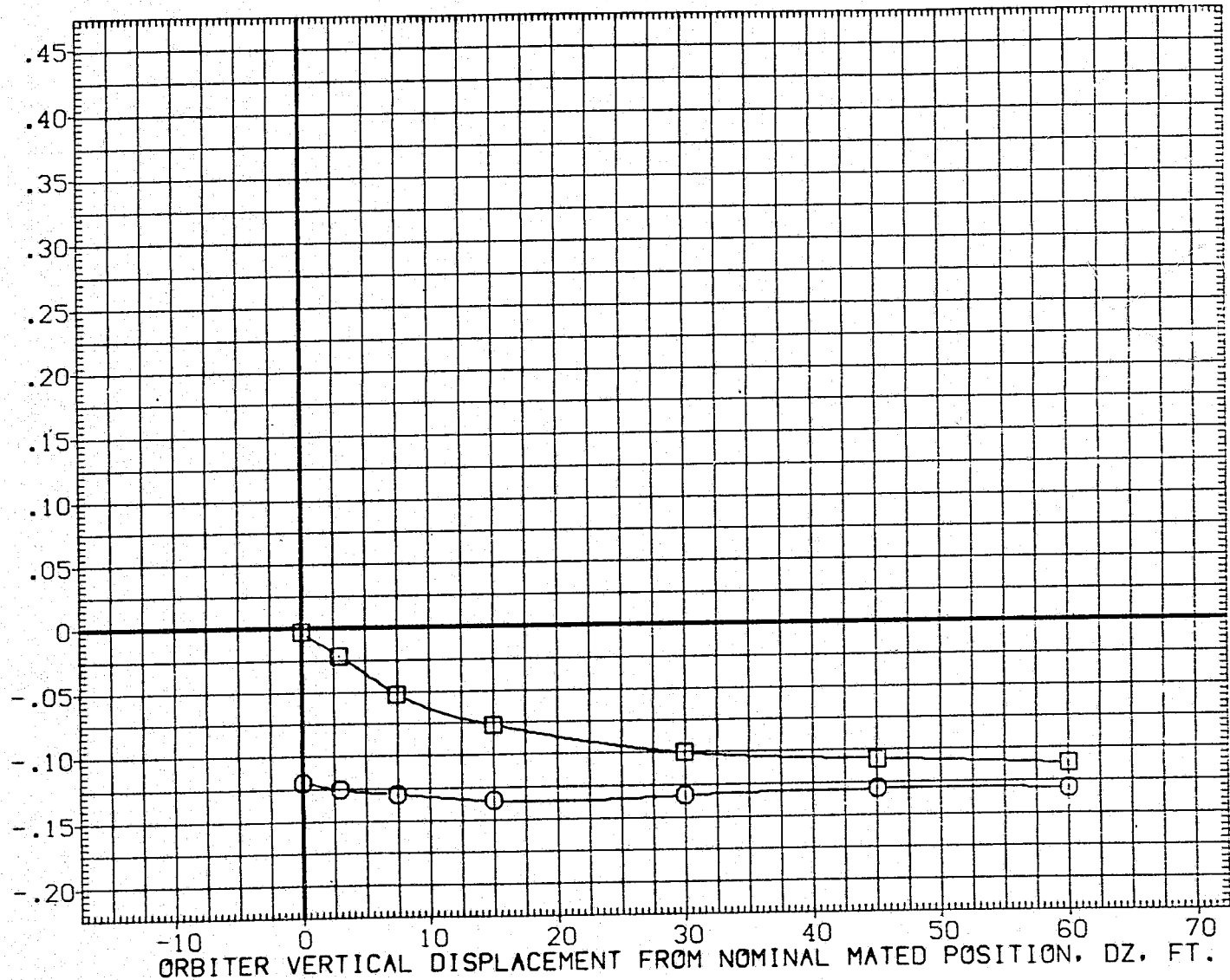


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEV0N 5.000 MACH .600
		BETA0 .000 BETAC 5.000
		PHI 7.500 DY 10.000
		DX .000 ALPHAC 8.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

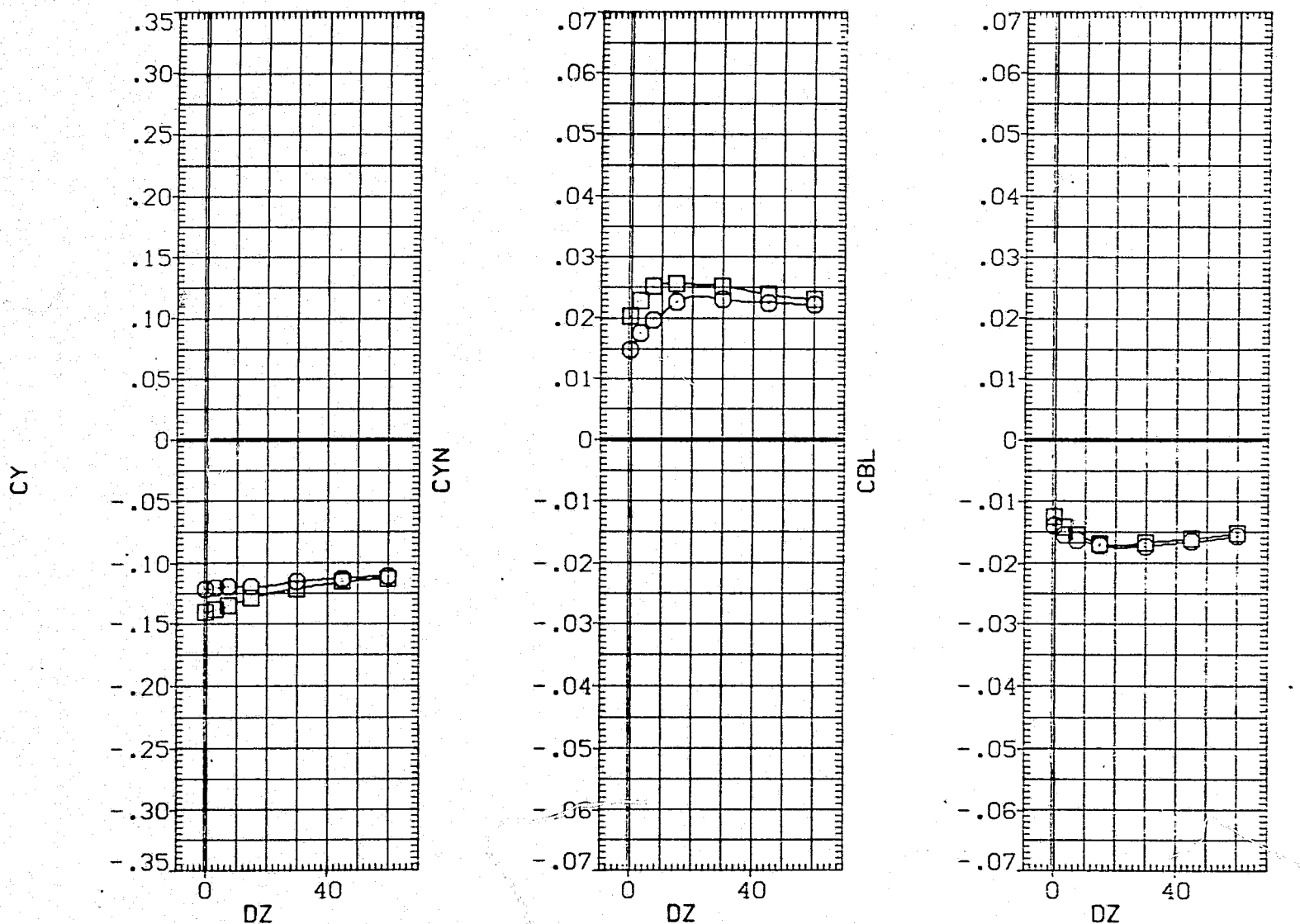


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

ELV-1B

14.000

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

5.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2346.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

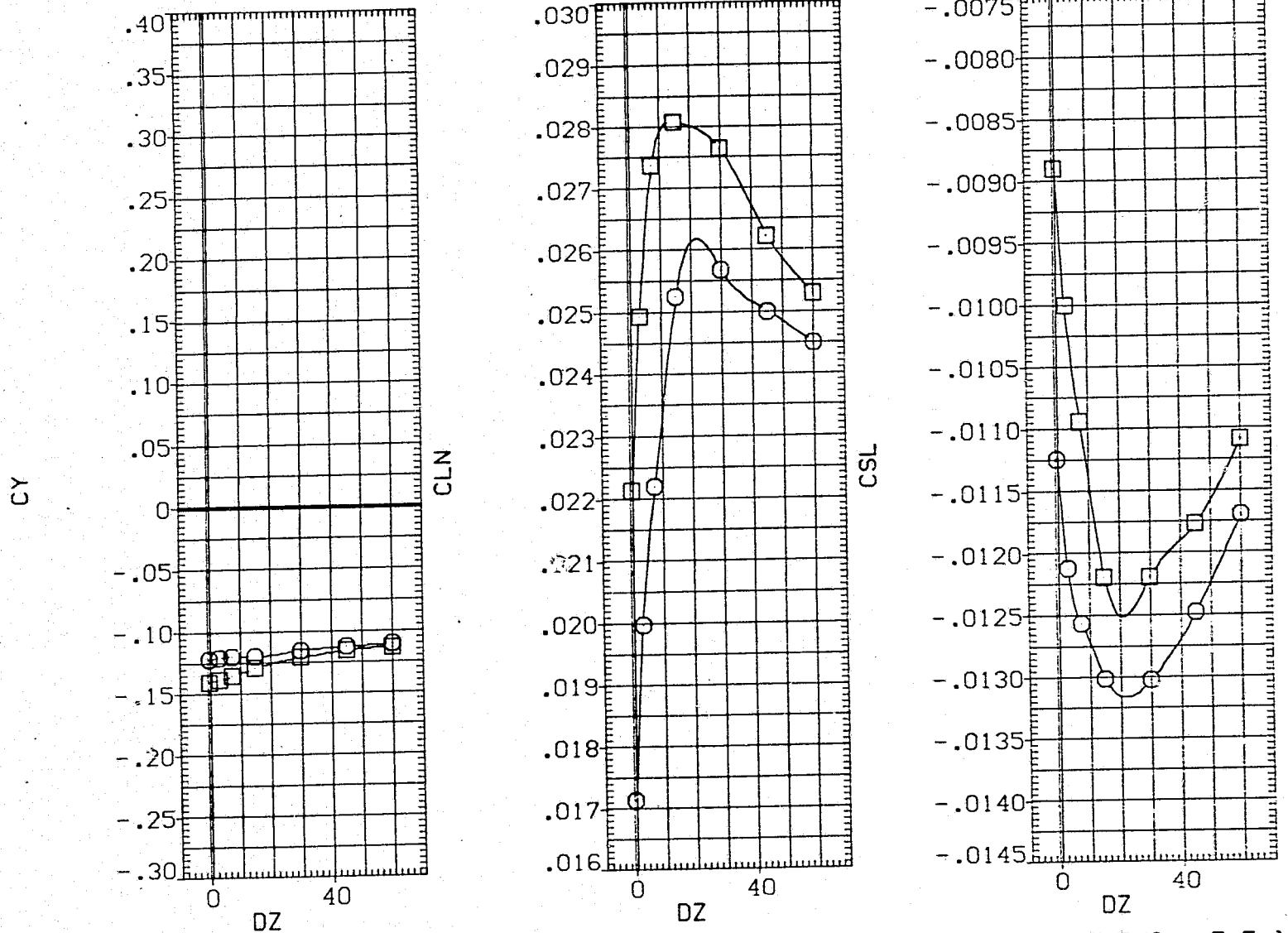


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

7.500

10.000

BETAC

ELV-0B

MACH

DX

BETA0

5.000

3.000

.600

.000

.000

REFERENCE INFORMATION

SREF

5500.0000

SQ.FT.

LREF

327.7600

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

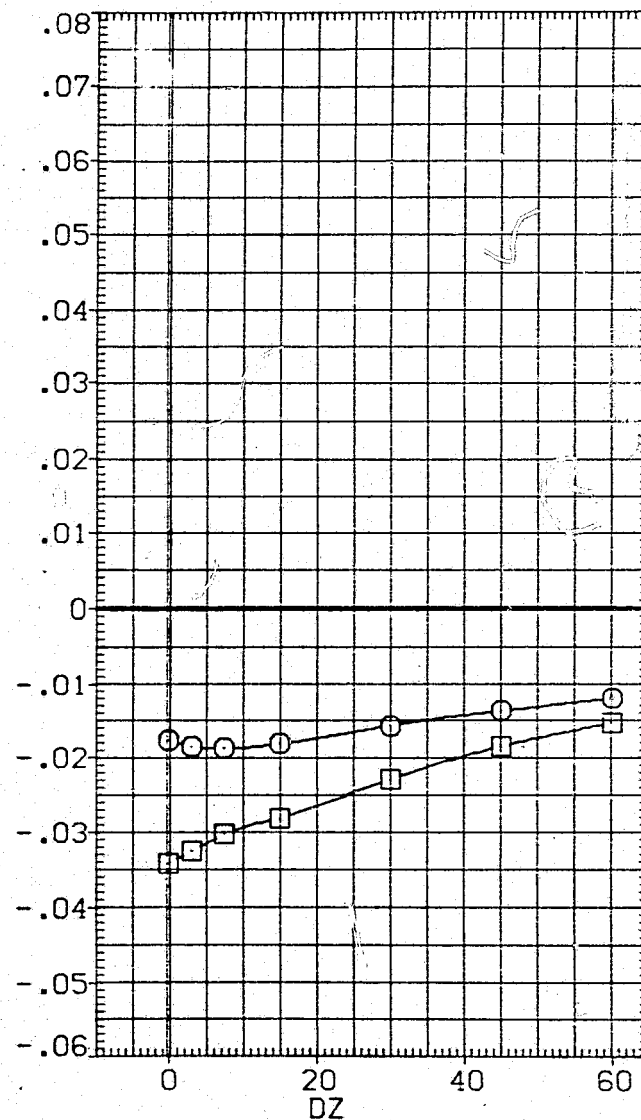
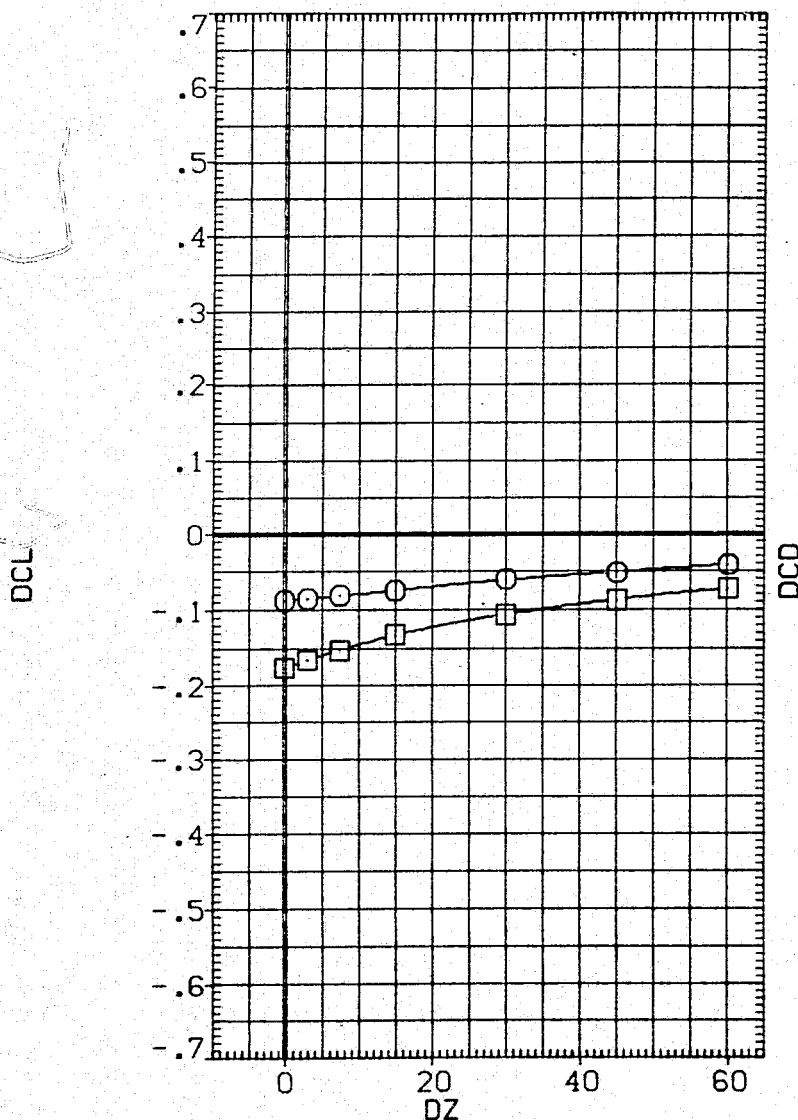


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

7.500

10.000

BETAC

ELV-OB

MACH

DX

BETA0

5.000

3.000

.500

.000

.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

IN.

IN.XC

IN.YC

IN.ZC

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

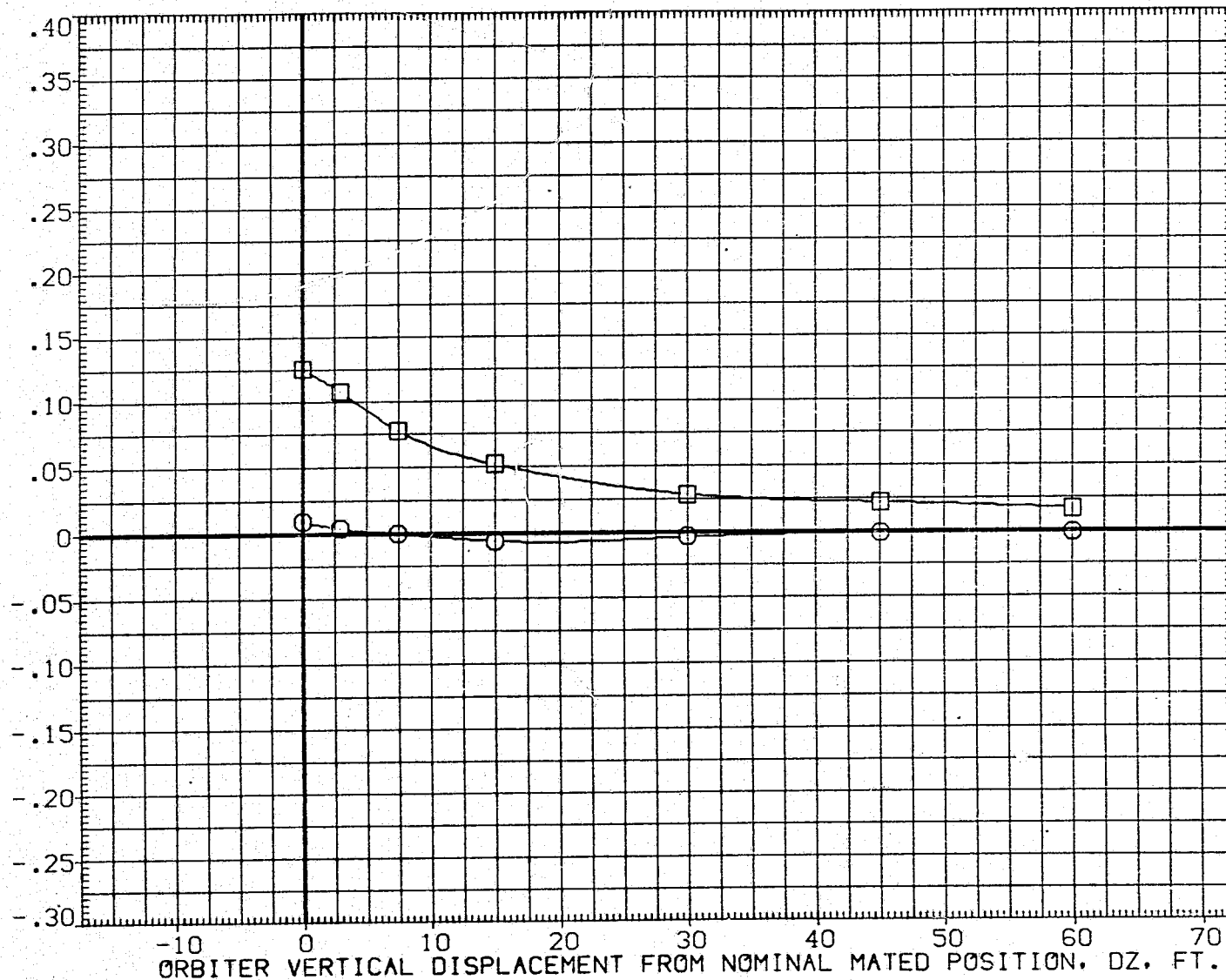


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES		
	10.000	ALPHAC	8.000	BETAC	5.000
○	14.000	ELV-1B	.000	ELV-0B	3.000
□		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

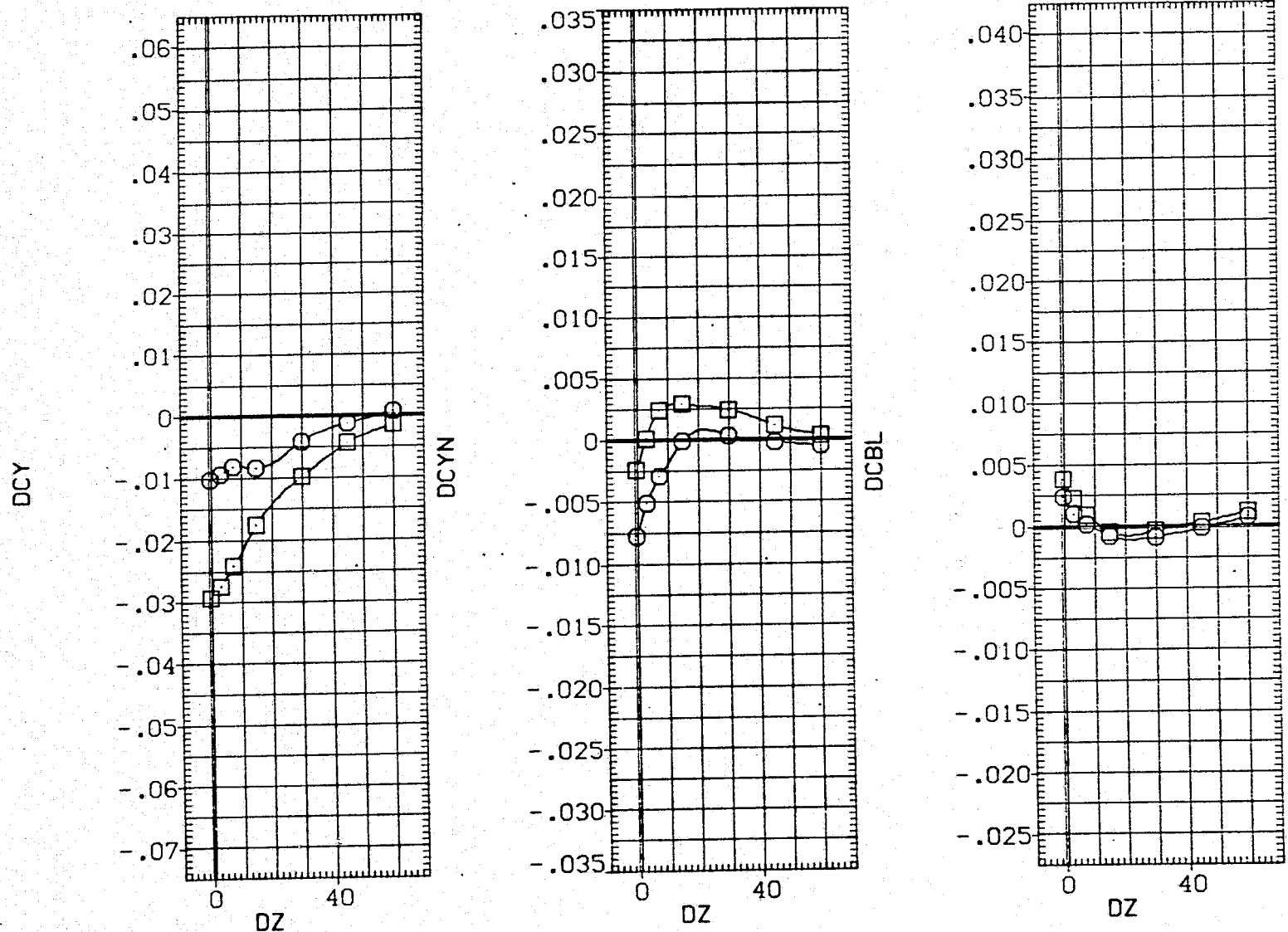


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES	
○	10.000	ALPHAC 8.000	BETAC 5.000
□	14.000	ELV-IB .000	ELV-OB 3.000
		ELEVON 5.000	MACH .600
		PHI 7.500	DX .000
		DY 10.000	BETA0 .000

REFERENCE INFORMATION		
SREF	5500.0000	50.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

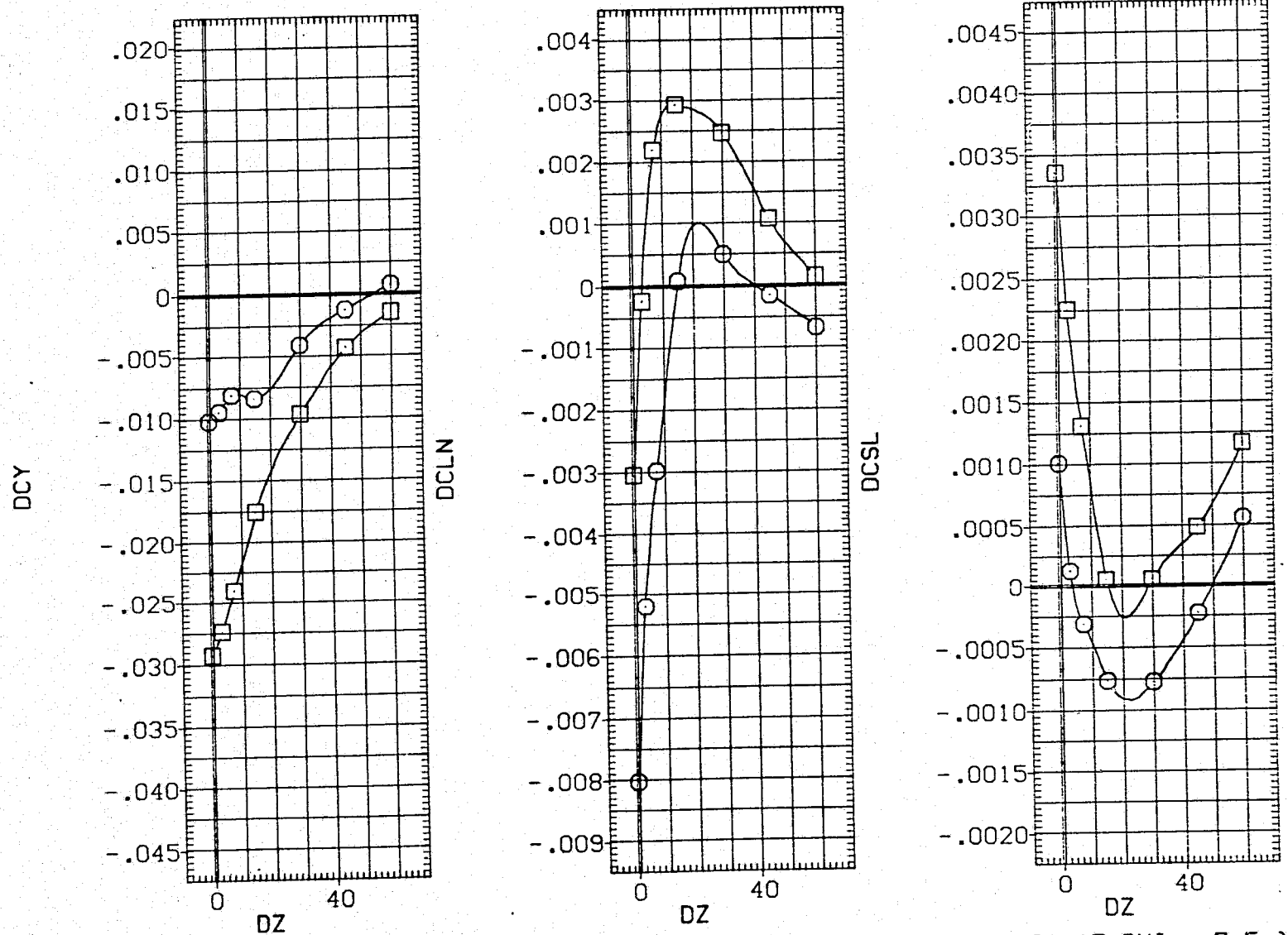


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGN093)

SYMBOL	ALPHA0	PARAMETRIC VALUES
○	10.000	ELV-1B .000 ELV-0B 3.000
□	14.000	ELEVON 5.000 MACH .600
		BETA0 .000 BETAC 5.000
		PHI 7.500 DY 10.000
		DX 10.000 ALPHAC 4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

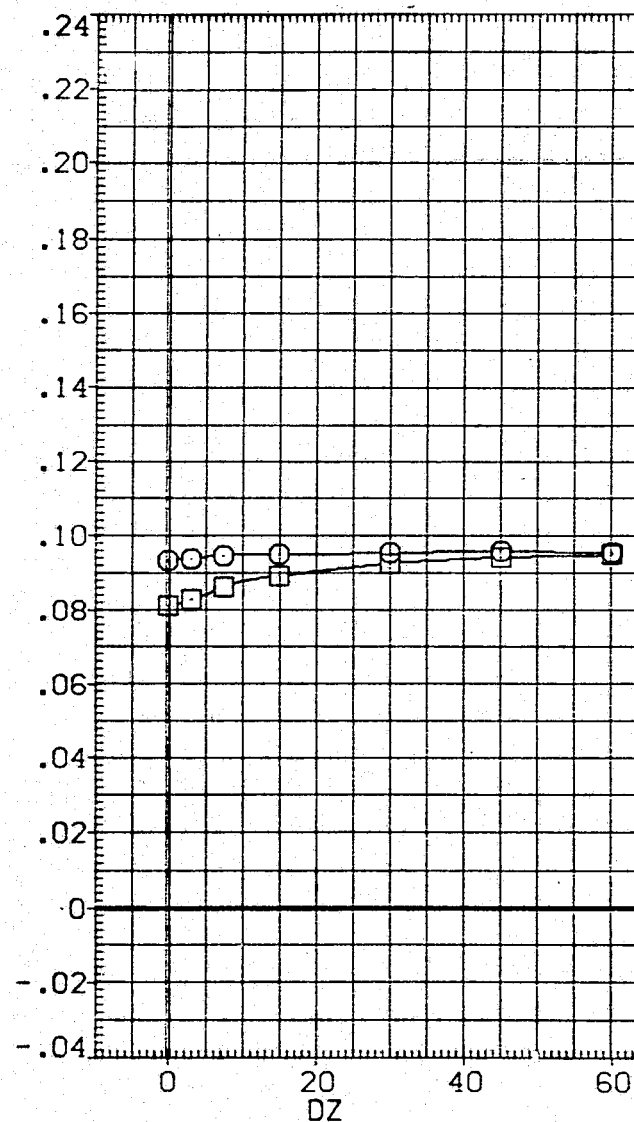
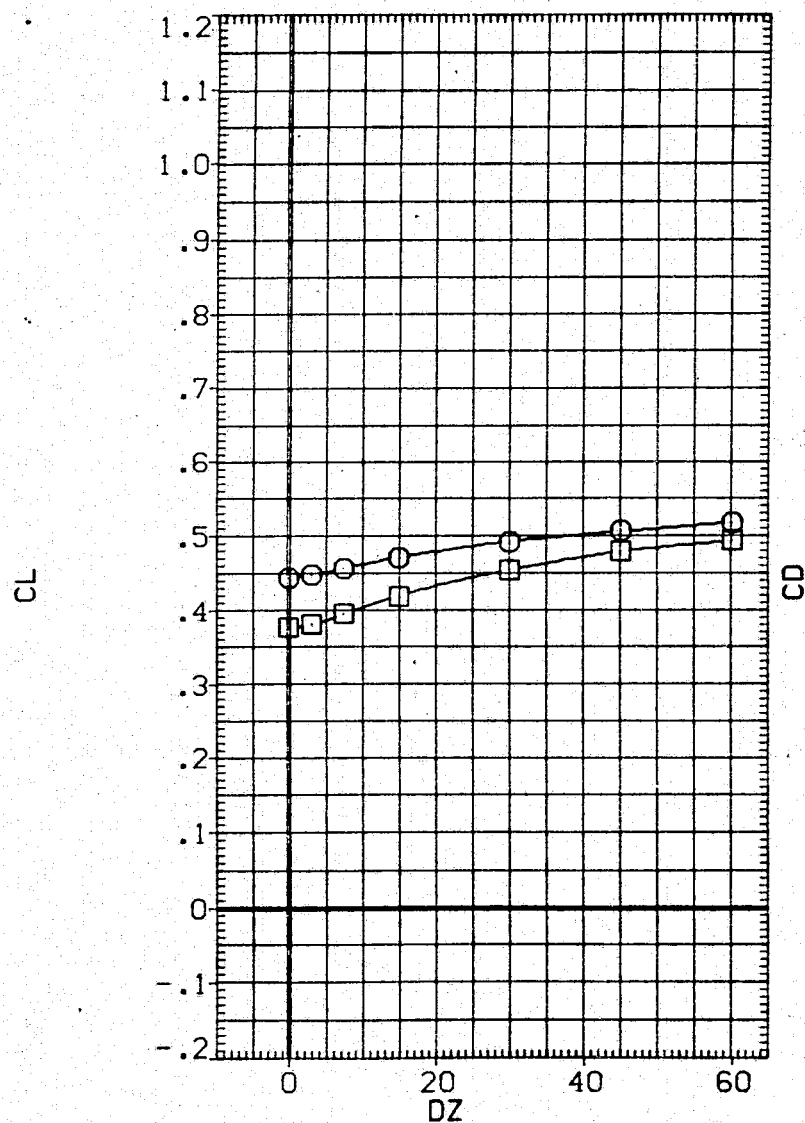


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ELV-1B

ELEVON

BETA0

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

10.000

ELV-0B

MACH

BETAC

DY

ALPHAC

3.000

.600

5.000

10.000

4.000

REFERENCE INFORMATION

SREF

5500.0000

50.FT.

LREF

327.7800

IN.

BREF

2348.0400

IN.

XMRP

1339.9000

IN.XC

YMRP

.0000

IN.YC

ZMRP

190.8000

IN.ZC

SCALE

.0300

PITCHING MOMENT COEFFICIENT, CLM

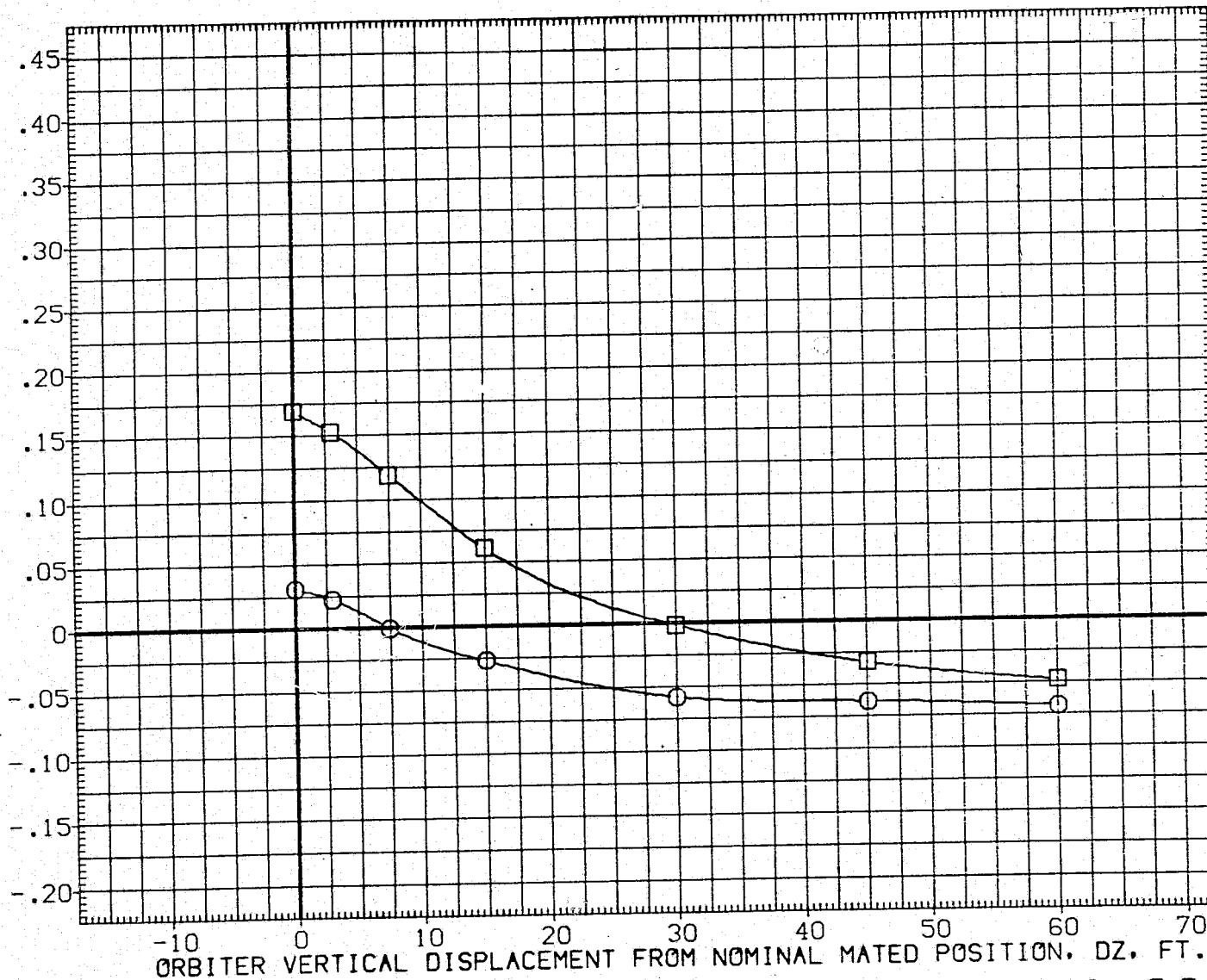


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGN093)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB	VALUES
○	10.000	.000		3.000	
□	14.000	5.000		.600	
		.000		5.000	
		7.500		10.000	
		10.000		4.000	

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

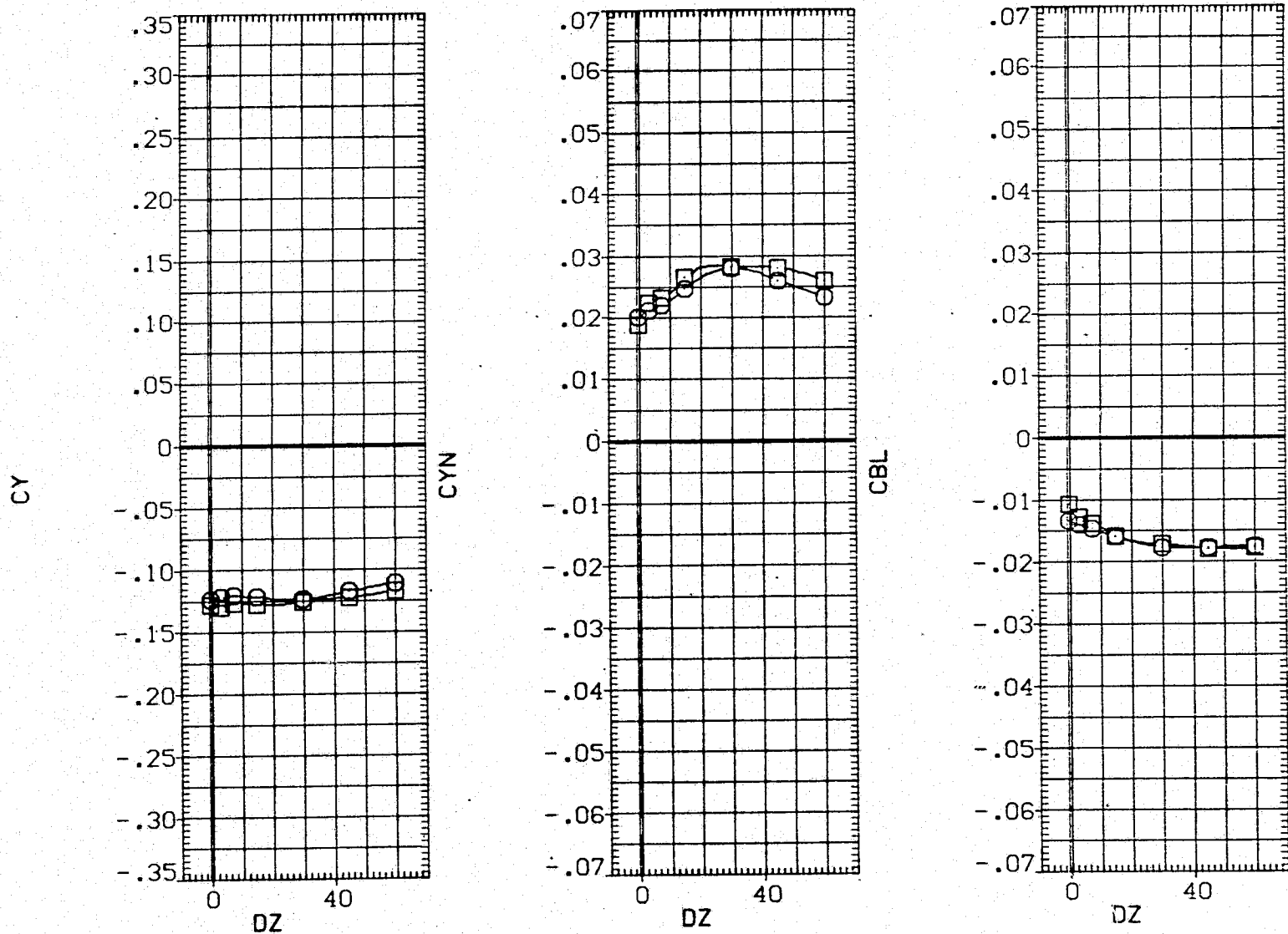


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-IB	PARAMETRIC VALUES	ELV-OB
○	10.000	ELEVON	.000	3.000
□	14.000	BETA0	5.000	.600
		PHI	.000	5.000
		DX	7.500	10.000
			ALPHAC	4.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

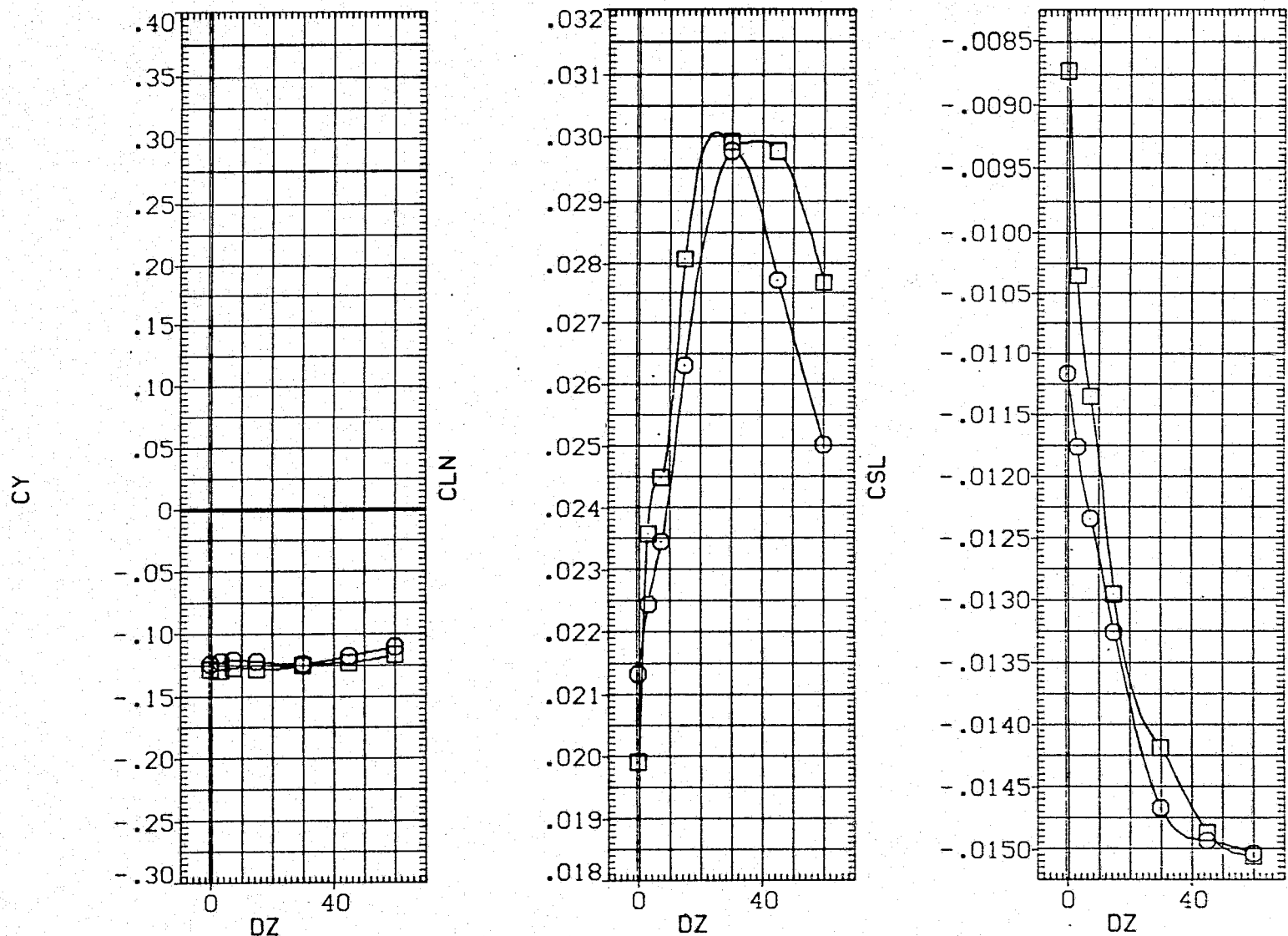


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

14.000

ALPHAC

PARAMETRIC VALUES

4.000

BETAC

5.000

ELV-IB

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

PHI

7.500

DX

10.000

DY

10.000

BETA0

.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

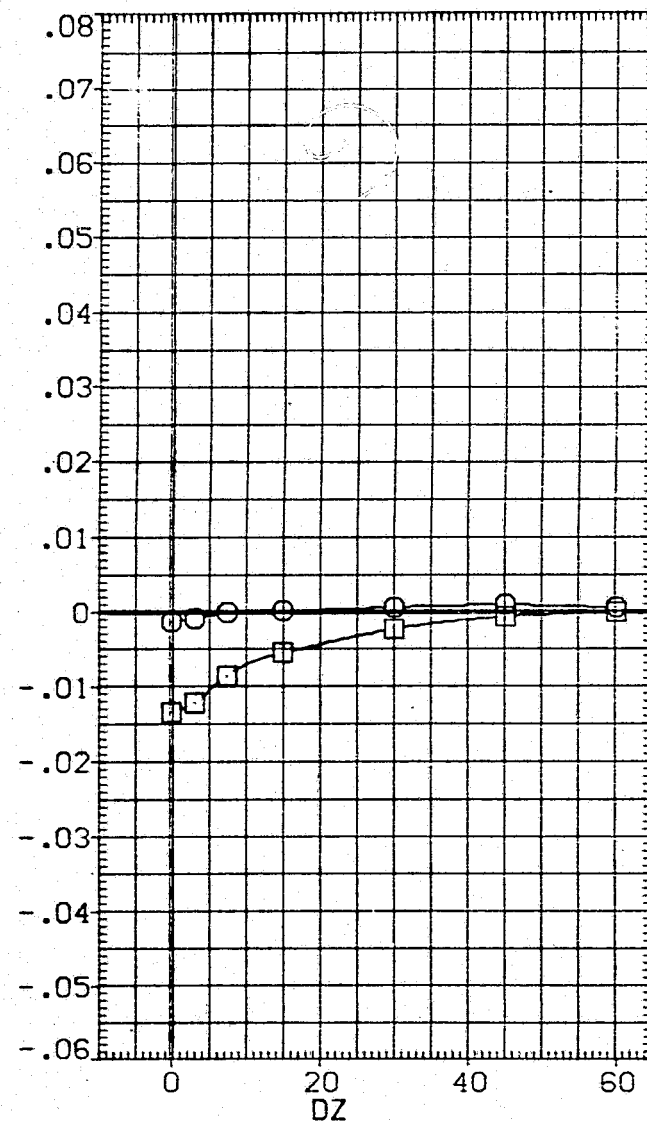
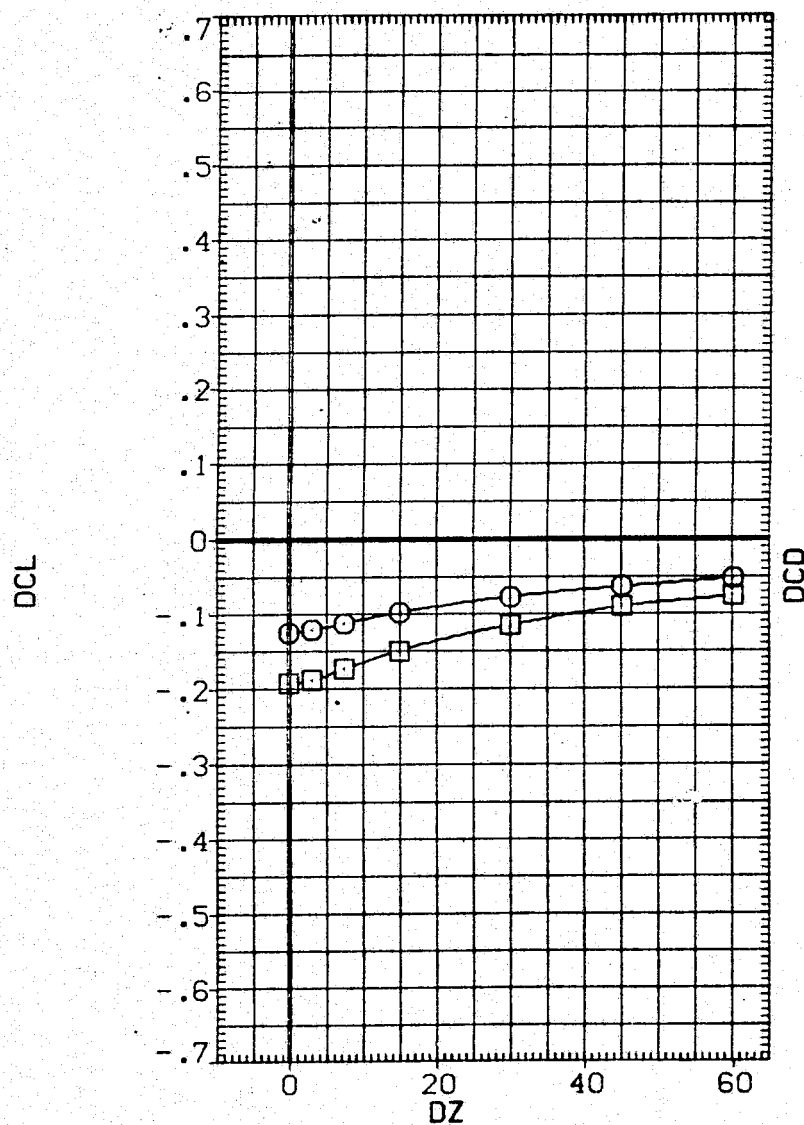


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

ELV-IB

ELEVON

PHI

DY

PARAMETRIC VALUES

ALPHAC 4.000

ELV-IB .000

ELEVON 5.000

PHI 7.500

DY 10.000

BETAC 5.000

ELV-OB 3.000

MACH .600

DX 10.000

BETA0 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.

LREF 327.7800 IN.

BREF 2348.0400 IN.

XMRP 1339.9000 IN.XC

YMRP .0000 IN.YC

ZMRP 190.8000 IN.ZC

SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

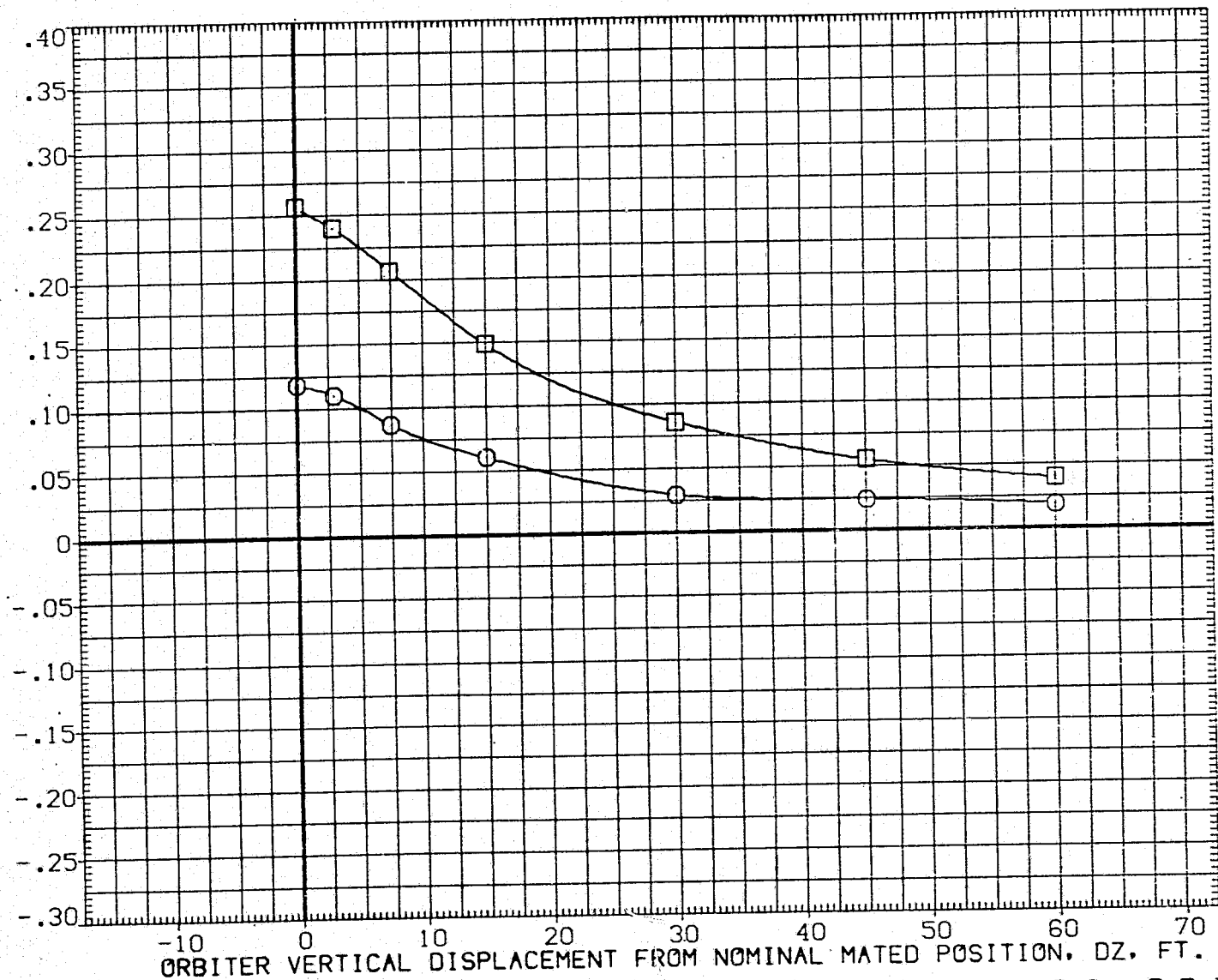


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0		PARAMETRIC VALUES	
	10.000	ALPHAC	4.000	BETAC
○	14.000	ELV-1B	.000	ELV-0B
□		ELEVON	5.000	MACH
		PHI	7.500	DX
		DY	10.000	BETA0
				.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

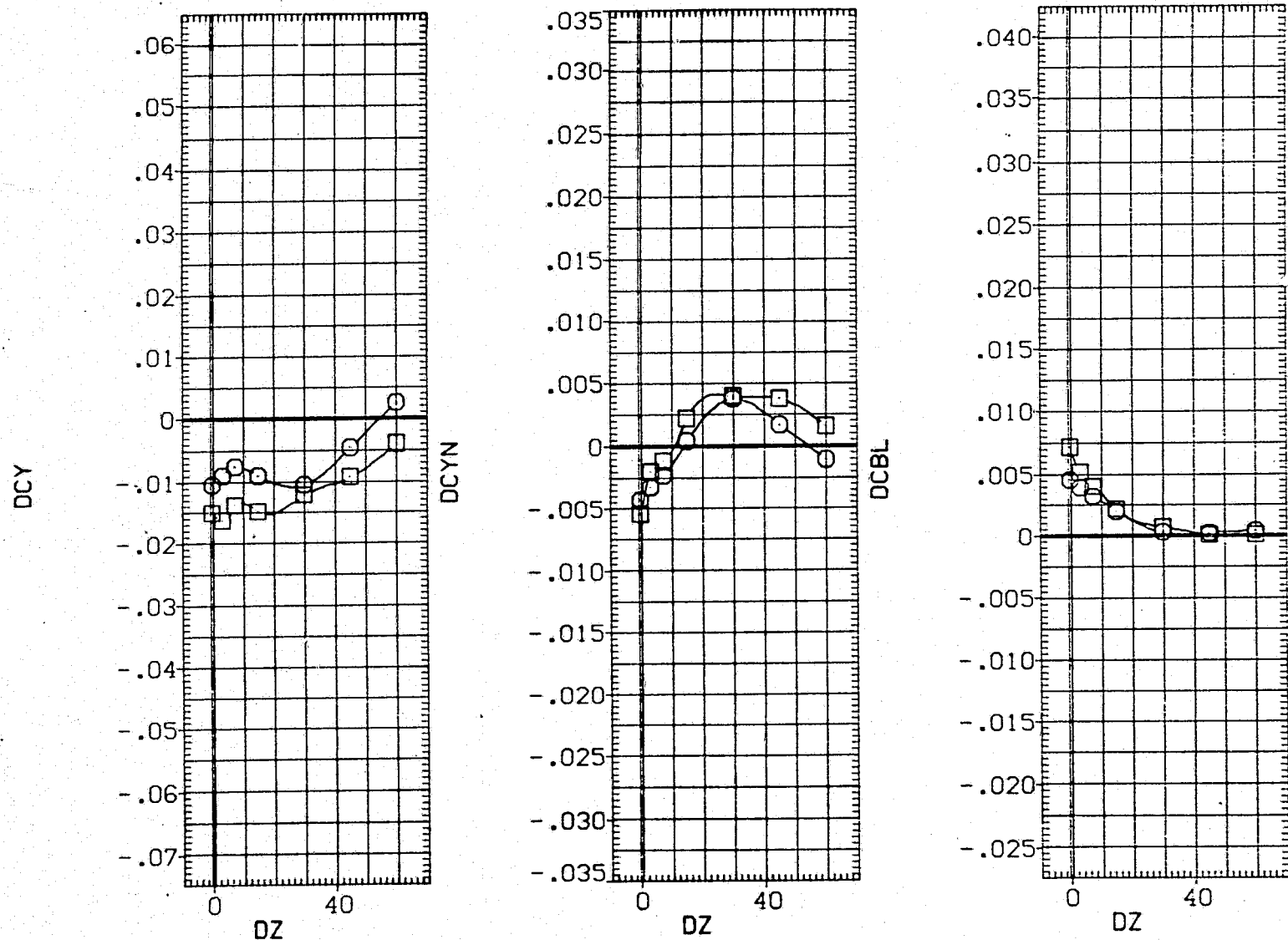


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES		
○	10.000	ALPHAC 4.000	BETAC 5.000	
□	14.000	ELV-IB .000	ELV-OB 3.000	
		ELEVON 5.000	MACH .600	
		PHI 7.500	DX 10.000	
		DY 10.000	BETA0 .000	

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

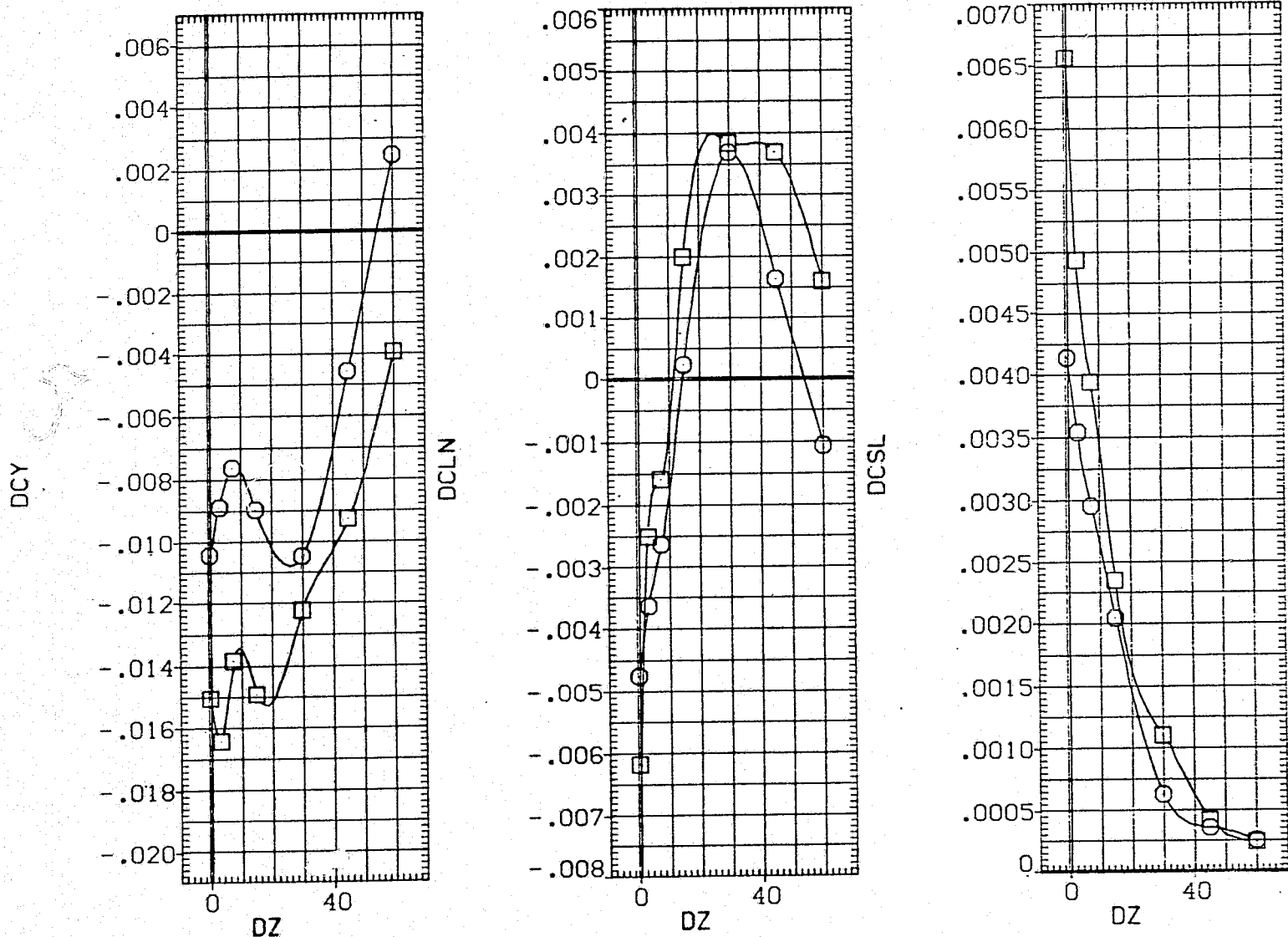


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGN095)

SYMBOL	ALPHA0	ELV-1B	PARAMETRIC VALUES	ELV-0B	
○	10.000	.000		3.000	
□	14.000	5.000		.600	
		BETA0	.000	BETAC	5.000
		PHI	7.500	DY	10.000
		DX	10.000	ALPHAC	8.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

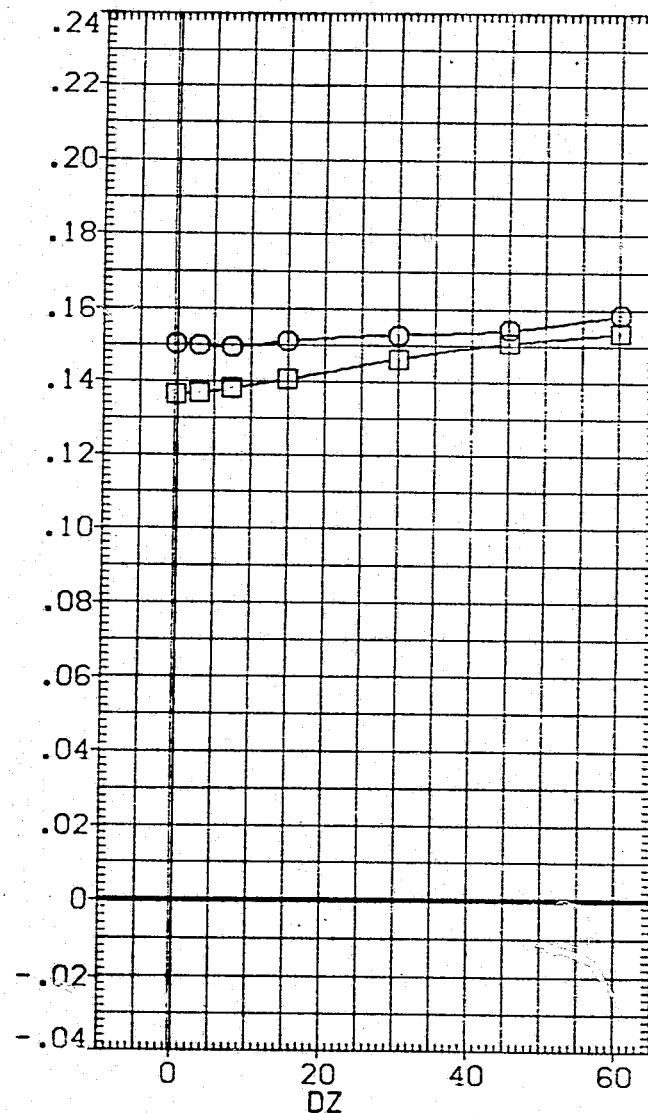
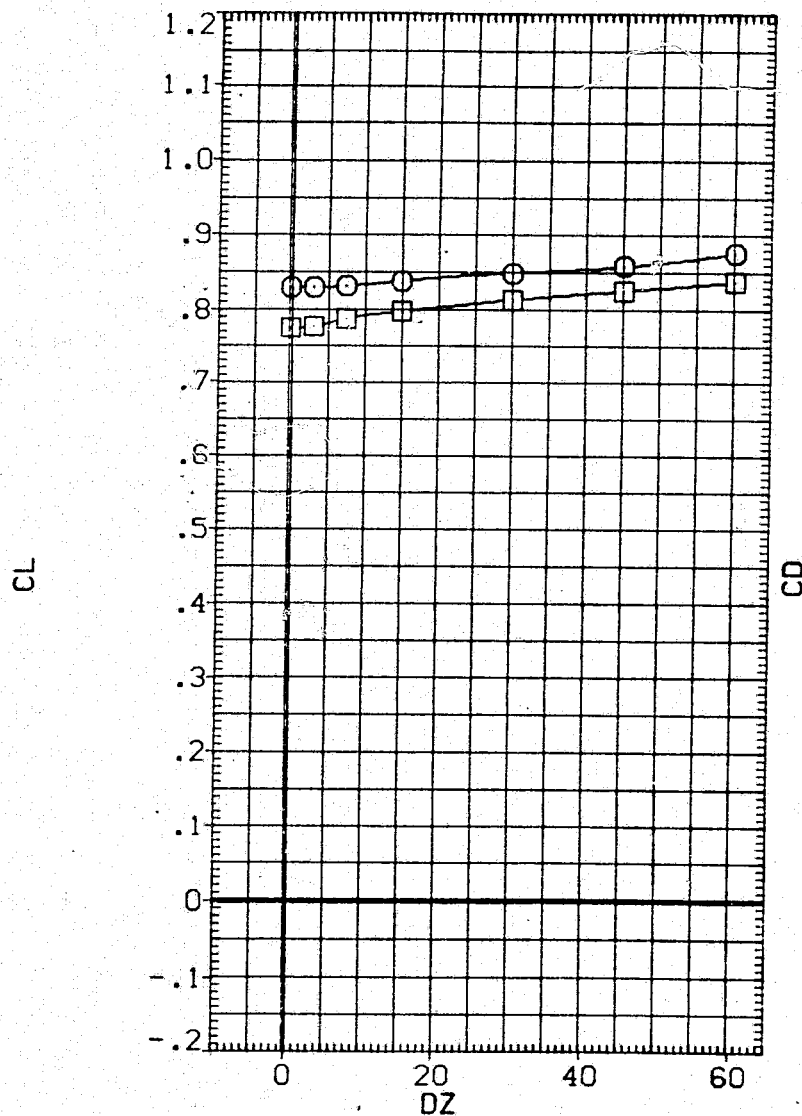


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL

○
□

ALPHA0

10.000

ELV-IB

PARAMETRIC VALUES

.000

ELV-OB

3.000

ELEVON

5.000

MACH

.600

BETA0

.000

BETAC

5.000

PHI

7.500

DY

10.000

DX

10.000

ALPHAC

8.000

REFERENCE INFORMATION

SREF	5500.0000	SC.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

PITCHING MOMENT COEFFICIENT, CLM

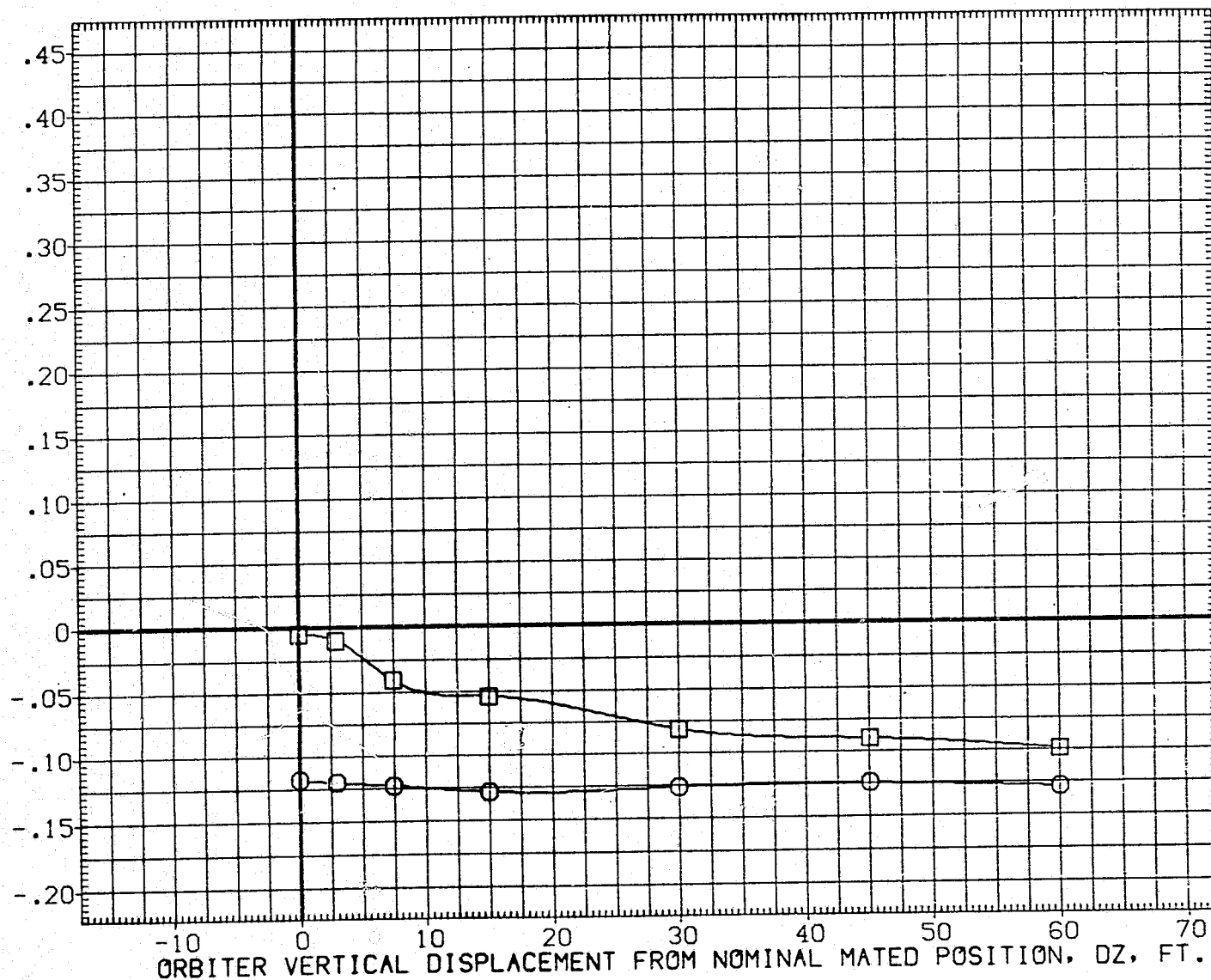


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ELV-18	PARAMETRIC VALUES	ELV-08	
○	10.000	ELEVON	.000	MACH	3.000
□	14.000	BETA0	5.000	BETAC	.600
		PHI	.000	DY	5.000
		DX	7.500	ALPHAC	10.000
			10.000		8.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

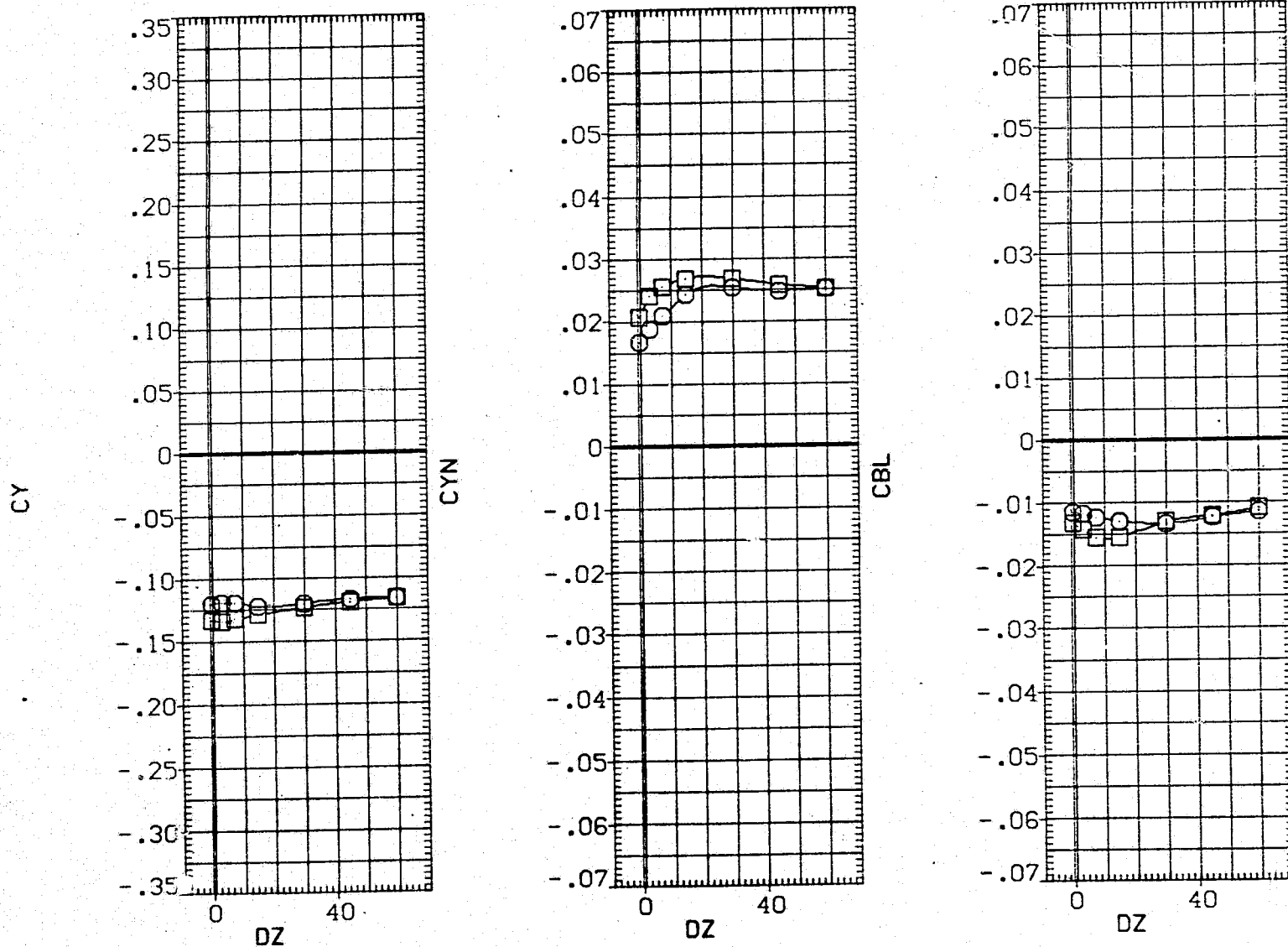


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

CA20 747/1 01 S1

CARRIER DATA (MGN095)

SYMBOL

○
□

ALPHAO

10.000

14.000

ELV-IB

ELEVON

BETAO

PHI

DX

PARAMETRIC VALUES

.000

5.000

.000

7.500

10.000

ELV-OB

MACH

BETAC

DY

ALPHAC

3.000

.600

5.000

10.000

8.000

REFERENCE INFORMATION

SREF 5500.0000

LREF 327.7800

BREF 2348.0400

XMRP 1339.9000

YMRP .0000

ZMRP 190.8000

SCALE .0300

SQ.FT.

IN.

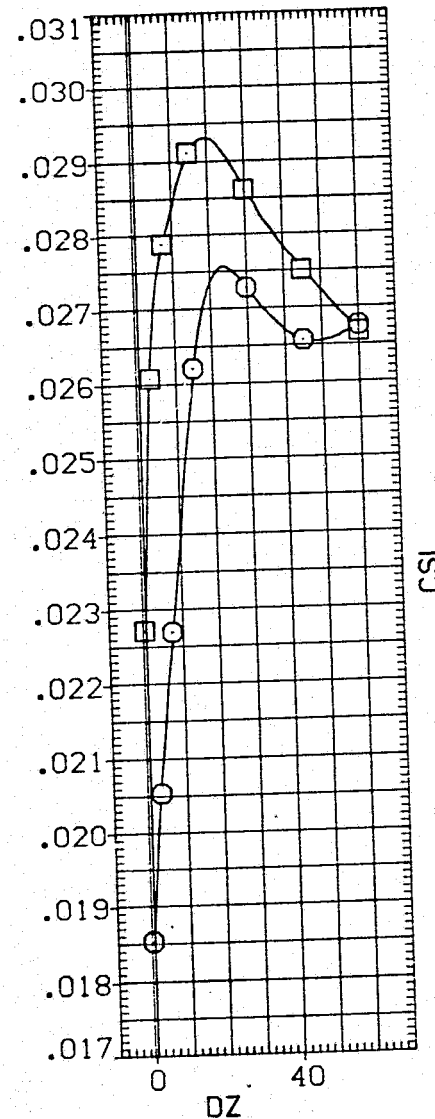
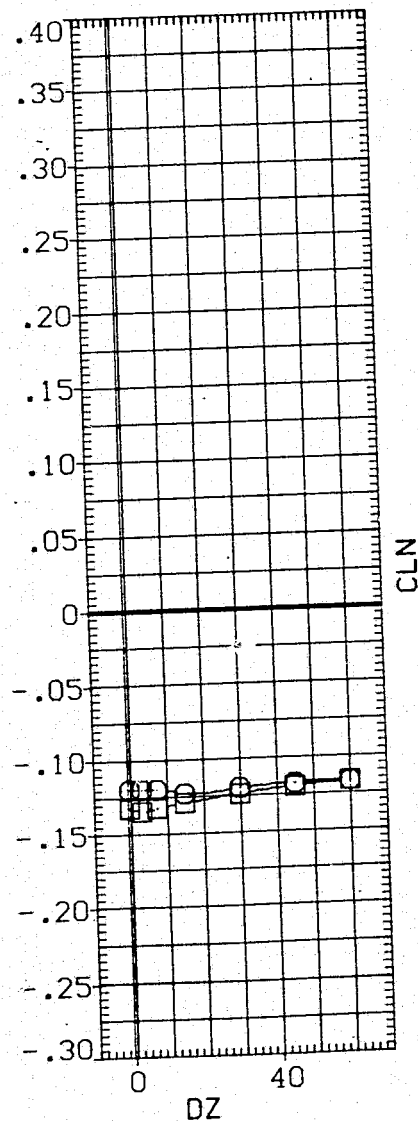
IN.

IN.XC

IN.YC

IN.ZC

CY



CSL

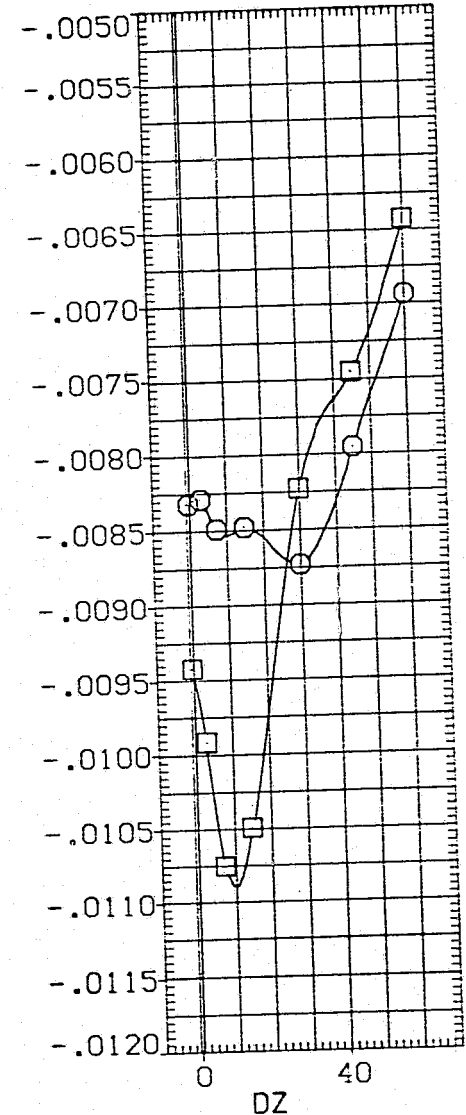


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000

14.000

ALPHAC

ELV-1B

ELEVON

PHI

DY

PARAMETRIC VALUES

8.000

.000

5.000

7.500

10.000

BETAC

ELV-0B

MACH

DX

BETA0

5.000

3.000

.600

10.000

.000

REFERENCE INFORMATION

SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

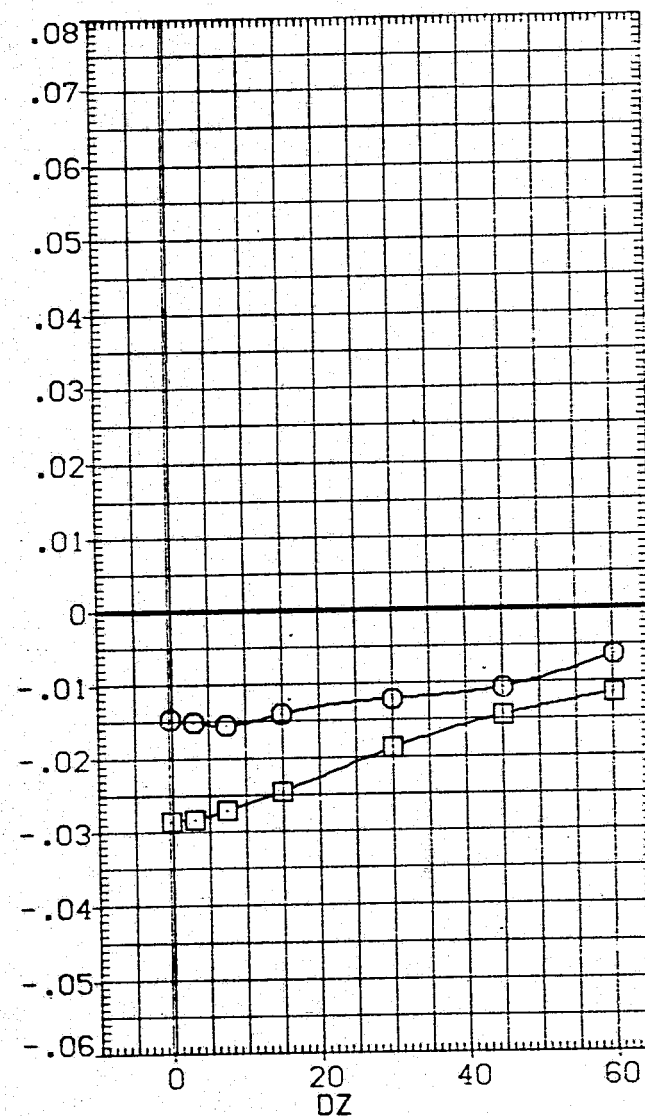
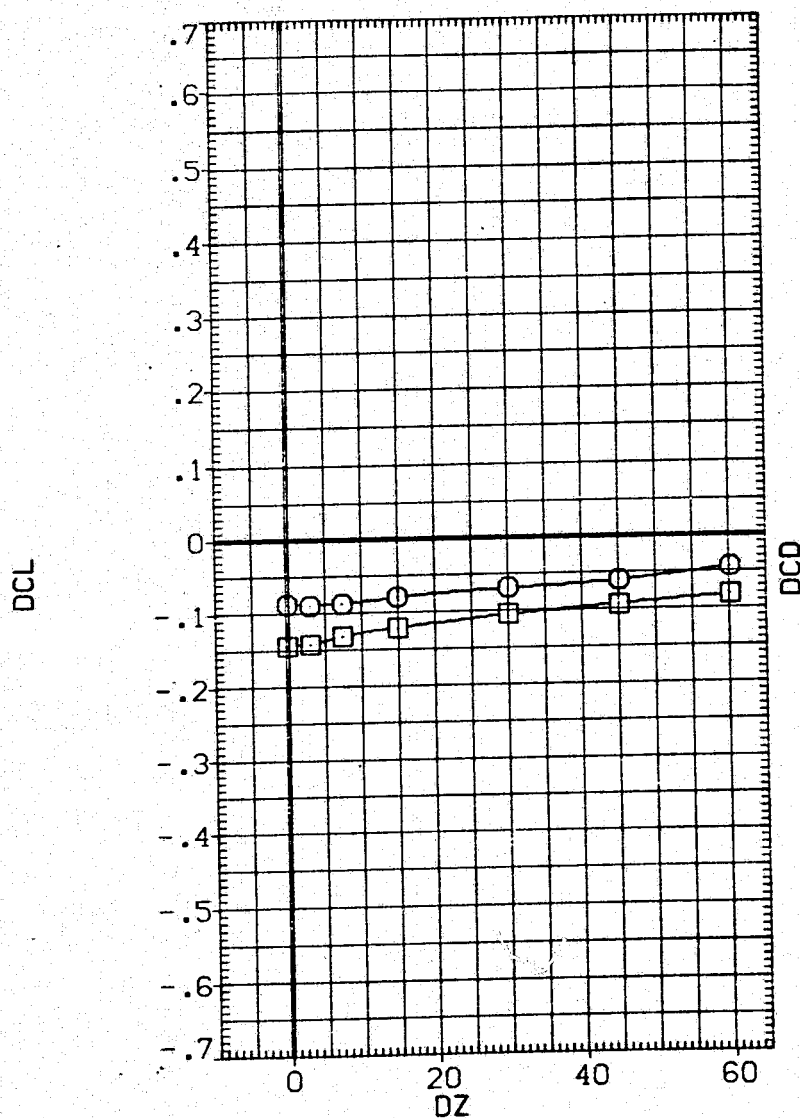


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL



ALPHA0

10.000
14.000

ALPHAC
ELV-IB
ELEVON
PHI
DY

PARAMETRIC VALUES

8.000 BETAC 5.000
.000 ELV-OB 3.000
5.000 MACH .300
7.500 DX 10.000
10.000 BETA0 .000

REFERENCE INFORMATION

SREF 5500.0000 SQ.FT.
LREF 327.7800 IN.
BREF 2348.0400 IN.
XMRP 1339.9000 IN.XC
YMRP .0000 IN.YC
ZMRP 190.8000 IN.ZC
SCALE .0300

INCREMENTAL PITCHING MOMENT COEFFICIENT, DCLM

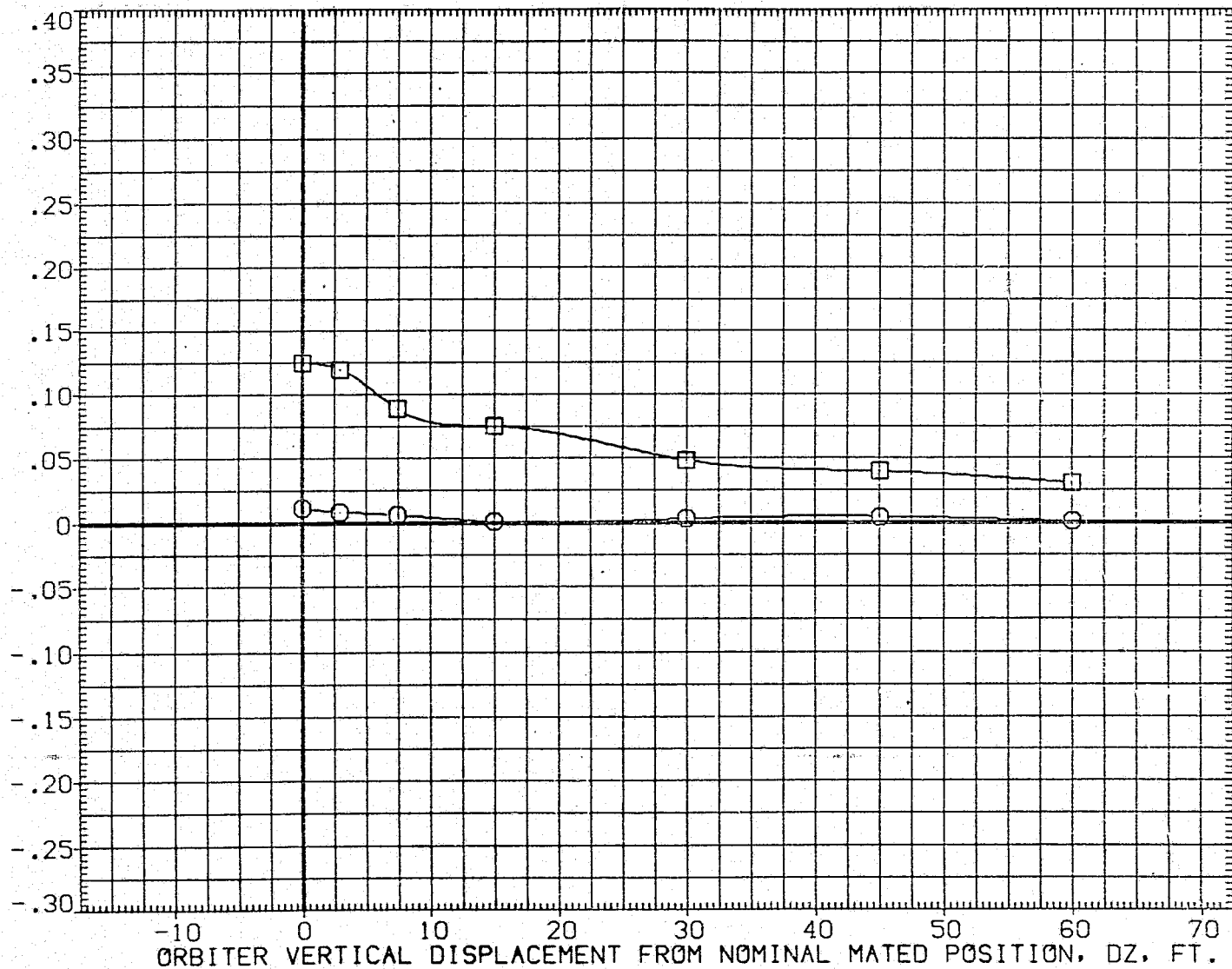


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	ALPHAC	PARAMETRIC VALUES	BETAC
○	10.000	8.000	BETAC	5.000
□	14.000	.000	ELV-0B	3.000
		5.000	MACH	.630
		7.500	DX	10.000
		10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SO.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

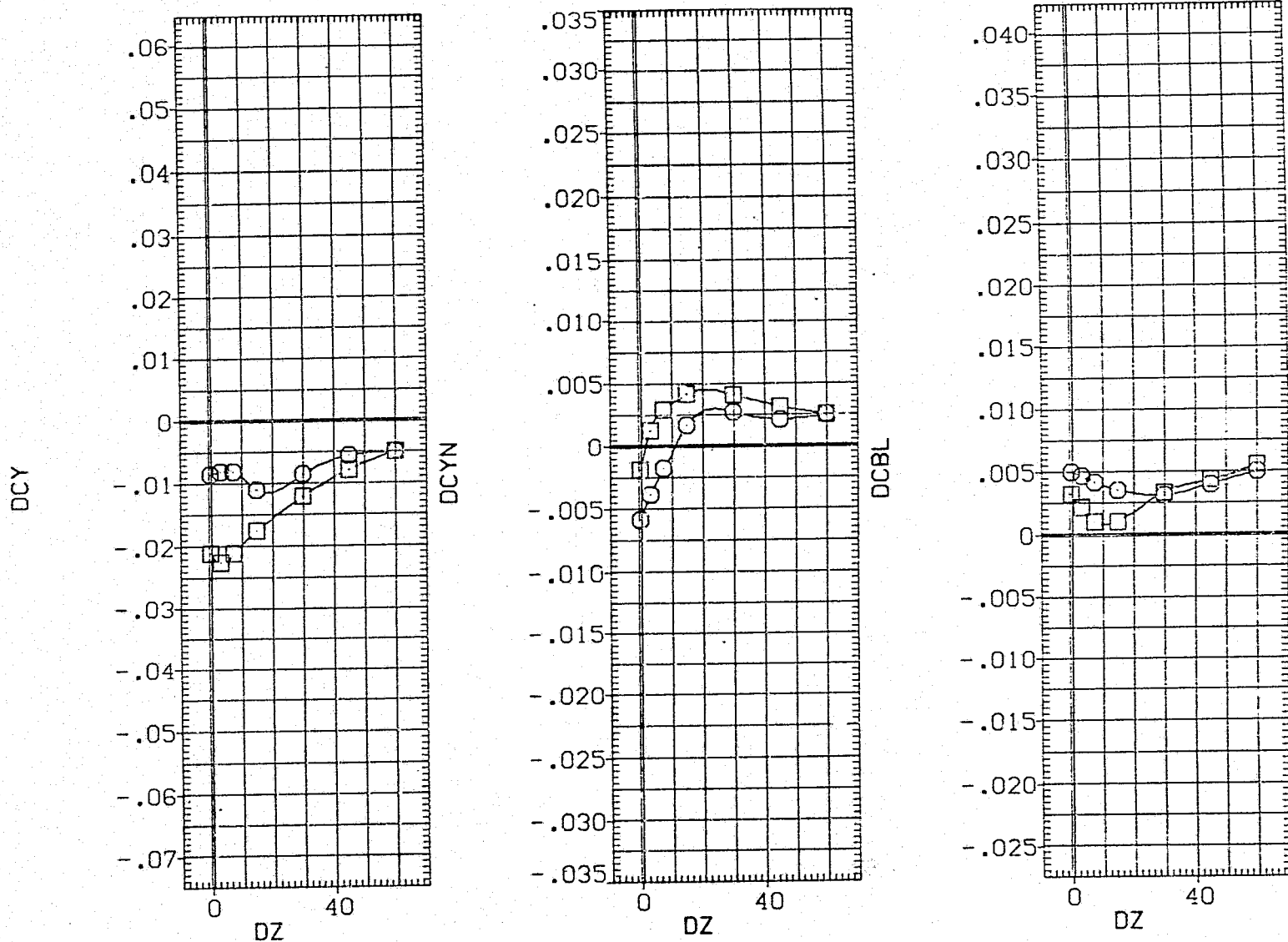


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)

SYMBOL	ALPHA0	PARAMETRIC VALUES			
○	10.000	ALPHAC	8.000	BETAC	5.000
□	14.000	ELV-IB	.000	ELV-OB	3.000
		ELEVON	5.000	MACH	.600
		PHI	7.500	DX	10.000
		DY	10.000	BETA0	.000

REFERENCE INFORMATION		
SREF	5500.0000	SQ.FT.
LREF	327.7800	IN.
BREF	2348.0400	IN.
XMRP	1339.9000	IN.XC
YMRP	.0000	IN.YC
ZMRP	190.8000	IN.ZC
SCALE	.0300	

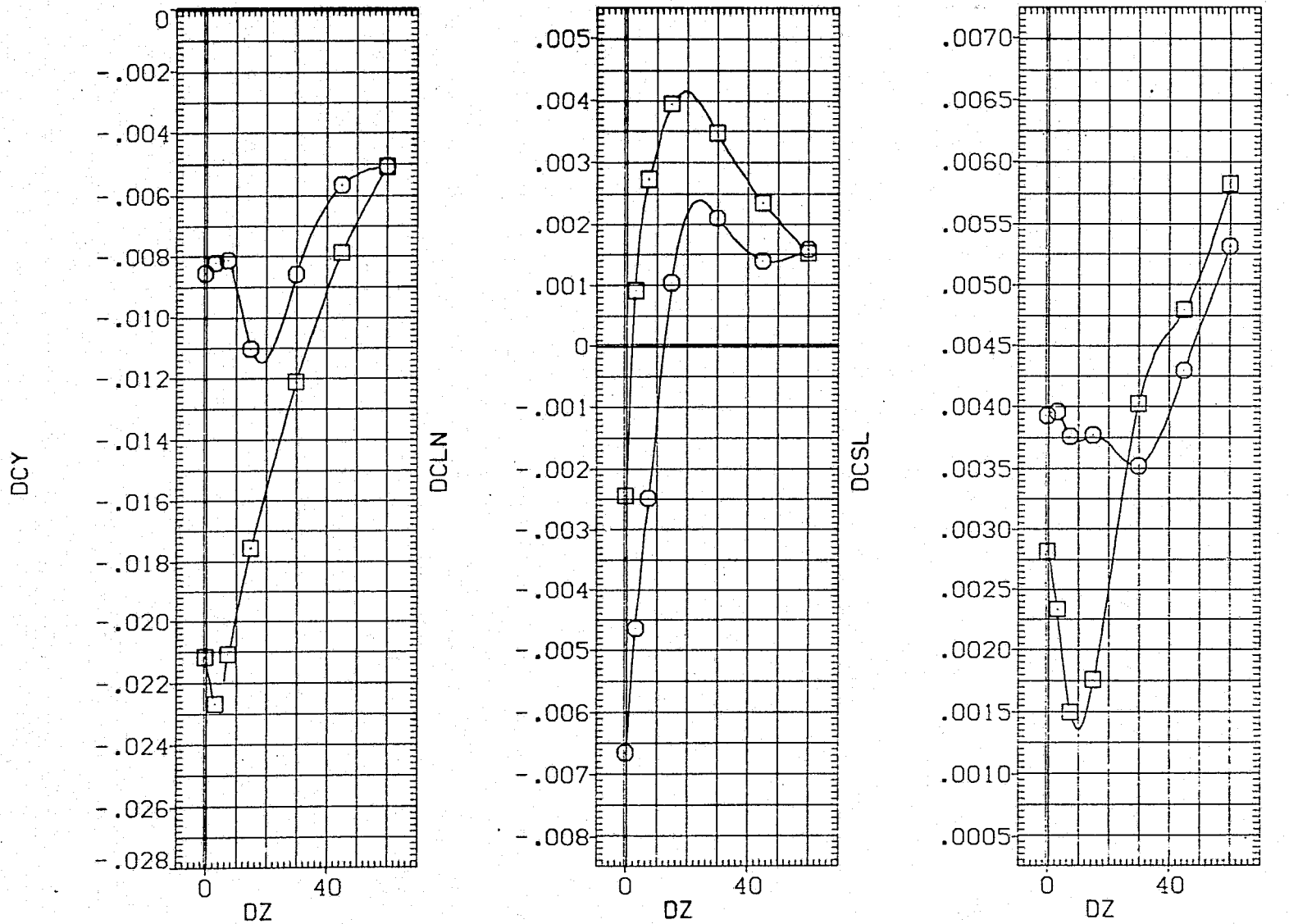


FIG 25 VARIATION OF CARRIER CHARACTERISTICS WITH DELTA Z (01 AT PHI = 7.5)